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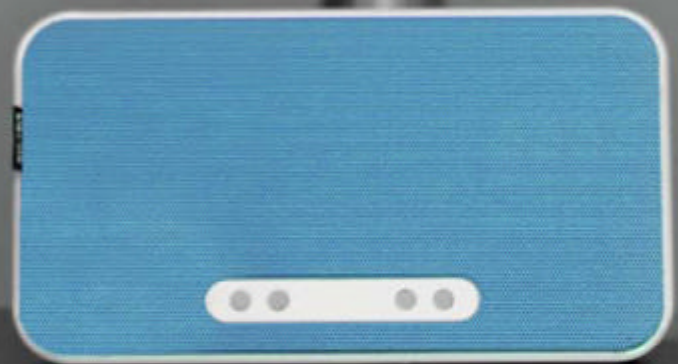


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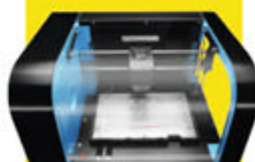
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03.15

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TOP 10 OF EVERYTHING

Looking to buy something but need a bit of advice? Turn to our *Stuff* Top Tens: our expert listings of all gadgetry, from **p121**

TVs

HOT BUY



LG 55EC930V

★★★★★

4K-beating OLED screen
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CONSOLES

HOT BUY



Sony PlayStation 4

★★★★★

The best games machine on Earth
p132

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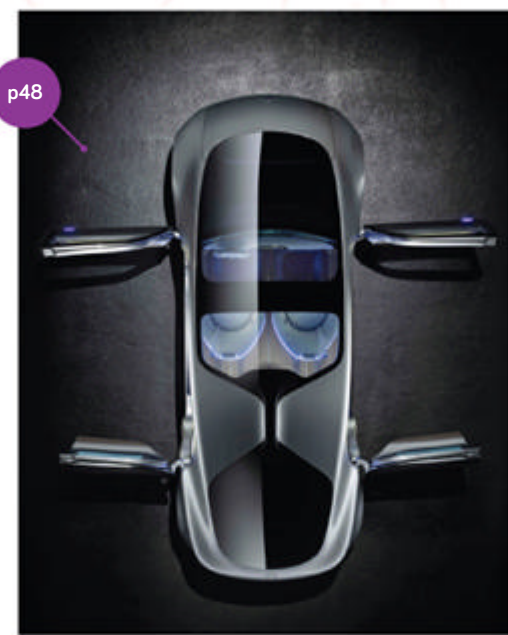
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Sky+HD

★★★★★

Our tellybox of choice
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p96

LG MUSICflow



SMART HI-FI AUDIO Wireless Multi-room

LG MUSICflow creates a whole new way to re-connect with your favourite music. Whether it's moving tracks from speaker to speaker, group playing or creating your very own home cinema, the LG MUSICflow provides endless possibilities. Simple to set up and easy to control thanks to LG's intuitive MUSICflow player app*, our range of speakers and soundbar will transform your audio experience.

www.lg.com/uk/musicflow



Live in
Flowing
Sound


*LG MUSICflow Player app is available on android, iOS and Windows Phone only

WELCOME



...to a magazine that looks like it's about the future, but is actually about things that have been around for ages. Podcasts, for example – remember them? – have been quietly heating up over the past decade, adding listeners here and there, until suddenly you realise everyone in your train carriage is listening to *Serial* and podcasts are more popular than respiration. How did that happen? Go to **p67** to find out.

Of course, podcasts are as fresh as a newly-sprouted daisy compared to electric cars. A century ago, Henry Ford's wife Clara refused to drive one of her husband's gas-guzzling Model Ts, preferring her Detroit Electric, but the processors and batteries and flux capacitors needed to get the vehicles of tomorrow on the road have finally arrived, and it's a very, very exciting time for things with wheels – flip to **p48** to find out how amazing the cars of the near future are going to be.

Still not vintage enough for you? How about design that's inspired by billions of years of evolution (**p85**), or an internet-connected take on the ol' log fire (**p77**)? No matter how futuristic things get – and in this magazine, they can get pretty darn futuristic – remember, some of it is as old as Dickens. 

Will Dunn, Editor / wild@stuff.tv / [@willydunn](https://twitter.com/willydunn)



THIS MONTH IN STUFF'S DIGITAL EDITION

- Animated, interactive pages, videos, trailers and more hi-res pictures
- Footage of *Stuff* at CES

Android fan? *Stuff* is also available on **Google Play**, **Zinio**, **Exact Editions** and **Samsung's Papergarden**.



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H

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HOT
SIX
#1

FLEXY, EVERYTHING ABOUT YOU'S SO FLEXY

LG G Flex 2

Last year saw the introduction of two bendy phones. The first, the LG Flex, curved on purpose. The second, the iPhone 6 Plus, curved when fretful fanboys took their frustrations out on it. Are bananaphones in fashion, then? With the new G Flex 2, they might well be. Its flexible Plastic OLED (POLED) display is now 1080p, but slightly smaller at 5.5in. It's comfortable in the hand, it's resistant to drop damage and its rear panel even repairs itself when scratched, but it's not just tough on the outside. It's also the first phone we've seen with Qualcomm's hilariously powerful 64-bit Snapdragon 810 processor, backed up by a hefty 3GB of RAM. Add 32GB of expandable storage and Android Lollipop, and here's a phone you'll want to bend repeatedly.

As hot as... **your yoga face**
[£tba / lg.com](#)



U

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28 PAGES
OF THE BIGGEST
STORIES FROM
PLANET TECH



Hands-on
with the
G Flex 2
**ESAT
DEDEZADE**
@EsatDedezade



LG has a new spin pattern finish for the G Flex 2's rear cover: faint concentric circles that catch the light as it moves. It looks fantastic in the Flamenco Red colour that we got to try – a deep two-tone glossy red reminiscent of a classic Gibson. Even without its banana-like form factor, it would be a stunning phone.

Looks aren't worth a jot without ergonomics,

however. The curve and lower 152g weight make the phone feel natural in the hand and easy to grip. It's not notably flexy unless you put a bit of effort in, which feels right to us.

The self-healing rear panel of the first G Flex has been improved. LG tells us that minor scratches will now disappear in ten seconds, as opposed to three minutes, and we can confirm this. The cover itself can be replaced, but the 3000mAh battery is non-removable.

On paper, the G Flex's OLED screen is not as sharp as that of its LG G3 stablemate. In practice it's plenty crispy, and without having both devices you'd struggle to miss the extra pixelage. Blacks are deliciously deep, colours are vibrant, and viewing angles hold up well.

From the brief time that we've spent with it, the LG G Flex 2 definitely warrants a more in-depth look – which we'll bring you as soon as we can.



HOT
SIX
#2

A REAL HEAD-TURNER

Parrot Exom by Sensefly

Humans have learned a lot from nature: legs point in the direction of the floor, for example. The Exom quadcopter photo drone also borrows from homo sapiens' huge list of observations by having distinct head and body sections. The body and wings can waggle with the wind, but the head remains level and stabilised. This ensures that it can make the most of its various senses: high-res still photos, HD video and thermal cameras, all capable of working simultaneously. The engineers at Sensefly – acquired but not fully subsumed by Parrot – didn't do all this natural extraction for a £20 laugh, though. The Exom will be a serious drone aimed at commercial or industrial work, with a serious price to match.

As hot as... your walking wiggle
£tba/parrot.com



HOT
SIX
#3

24-BIT BONCE BOX

Sony Walkman ZX2

Having (barely) recovered from the blow of losing the iPod Classic, we're finding solace in a device bearing the trusty Walkman brand. The ZX2 is a satisfyingly chunky piece of tech designed to be the standalone high-res audio player that wandering audiophiles have been quietly clamouring for. It supports pretty much every high-res audio file type you care to name, up to 192kHz/24-bit quality, but if your collection contains some shamefully small files, fear not: it also has Sony's DSEE HX tech for upscaling nasty noise to lovely music. There's 128GB of internal memory, with another 128GB available via microSD.

Ashot as... studio-quality sound on the bus
US\$1000 (due spring) / sony.co.uk



HOT
SIX
#4

HIGH-RES HQ

Astell & Kern AK500N

Here is the modern equivalent of keeping your vinyl collection in a sealed concrete room with automatic fire extinguishers and a battlegroup of highly trained, dust-eating spiders. This Android-powered network audio server has four SSD drive bays, which can be arranged in a RAID array to instantly back up your collection – and we mean instantly, as it has a CD drive with one-button importing to DSD high-res formats. It has an audiophile's delight of digital inputs and outputs on the back and DLNA wireless too. Twin Cirrus CS4398 DACs handle the music with the sonic equivalent of white silk gloves and, while in use, the whole device switches to battery power to prevent any interference. Of course, you'll want to keep your AK500N in the sealed room, with the spiders.

As hot as... a muso's bated breath
£9000 / astellakern.com



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winner

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HOT
SIX
#5

KNOW HILLS LIKE THE BACK OF YOUR HAND

Garmin Epix

"He's got the whole world in His hands, got the whole wide world in His hands." Well, then, ask Him what the elevation of yonder ridge is, because we want to know if it's going to be dangerous to attempt it before nightfall. He doesn't know? Typical. Fortunate, then, that while we don't have the whole world in our hands, we do have topographical maps of Europe on our wrist. This new flagship Garmin watch combines all of the multisport/ triathlon tricks of something like the Forerunner 920XT with the smartwatch snazziness of the Vivoactive and the GPS navigation of an Edge or Oregon handheld. It has a 1.4in colour touchscreen with 8GB of internal storage, plus Bluetooth for smartphone sync. So tell your mate with the big hands that the Epix could show him a thing or two about epic adventures.

Ashot as... the fiery pits of hell
£420 / garmin.com



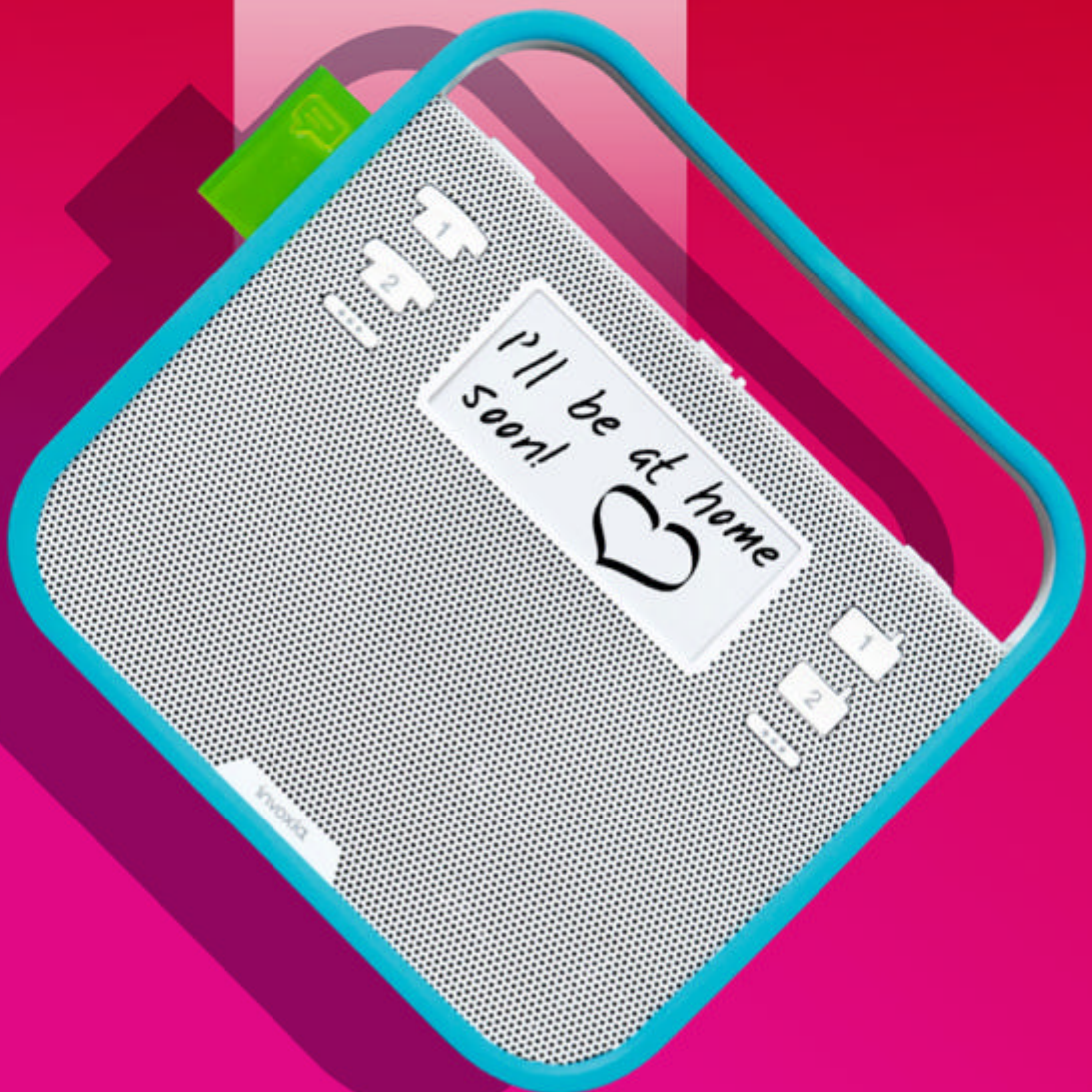
Read about more wearables we loved from Las Vegas's CES in *Stuff's* first ever Wearable Tech Awards on p96

HOT
SIX
#6THE FRIDGE IS
COOL AGAIN

Invoxia Triby

Whatever Wi-Fi router manufacturers might tell you, the true 'hub' of any home is of course the fridge. It's often delved into on a purely speculative basis, or while chatting, and it has traditionally been the site for analogue message systems, such as passive-aggressive 'reminders'. But why have a paper note when you can have an E Ink message? Why frown at someone's request to take the bin out, when you can phone them using the Triby's VoIP call functionality and discuss whose turn it is? And why not investigate how different condiments taste on cold pizza, while you're at it?

Ashot as... that half-eaten curry
US\$200 / invoxia.com



CURVE YOUR ENTHUSIASM

Samsung ATIV One 7 Curved

US\$1300 / samsung.com

The Samsung's brain and curved screen fit into a package just under 4cm deep



Your TV's curved, your phone's curved... so isn't it about time your home PC was curved too?

● It's not very curved.

But then you're not going to be sitting very far away from it. The 27in non-touch panel has a curvature rating of 4000, compared with up to 11,000 for a curved TV. The reason for having any curve is immersion: it tricks the brain into thinking the screen is bigger than it is. Stupid brain.

● The brain isn't that stupid.

Because, while it might be suckered into generating

neuron-fire 'oohs' and 'aahs' about the immersion, it'll also be locking on to individual pixels. How easy is managing this feat of visual skill? Very easy, for the ATIV One 7 only has a 1980x1020 screen. This makes for a poor comparison with the 27in iMac, surely the most desirable of all-in-one home PCs, with its 2560x1440 standard or 5120x2880 Retina display.

● Comparing it to an iMac isn't exactly fair.

The ATIV One 7 will retail at US\$1300, for which a straight tax-notwithstanding conversion would be about £850. Which ain't iMac money. The rest of the specs

bear this out: a Core i5 processor, 8GB of RAM and integrated graphics. There's a 1TB 5400rpm hard drive and a slew of USB 3.0 ports but no optical drive. But be not downhearted, for some Samsung add-ons will make the ATIV more fun to use than its specs would suggest. SideSync 3.0, for example, shows desktop notifications from your Galaxy mobile. Whoop! Get it bought!

● You can't buy it.

Ah. Samsung tells us it doesn't plan to bring this model to the UK, but they might be planning a higher-res version for Britishers... Or you might just need to order one from the States.



In other Samsung news:

● Ring radiator speakers

The WAM-6500 and WAM-7500 are wireless speakers that – as is the current trend – fire music out on all sides, so that no-one is left out. The 6500 has a battery for portability; the 7500 can be affixed to a stand or hung from the ceiling.



● SUHD TV

Infuriatingly, the 'S' simply tells us it's Samsung's new high-end UHD TV, rather than standing for anything. These contain nanocrystal semiconductors – AKA Quantum Dot technology – and run Tizen OS. The results are still 4K but more 'spectacular'...

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Two-year warranty

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Bowers & Wilkins

B&O BEOSOUND MOMENT

£1800 / bang-olufsen.com



Would you mind explaining what this is?

Okey-dokey. But we'll start with what this isn't. The BeoSound Moment is not a speaker. You'll need one of Bang & Olufsen's wired or wireless active speaker systems to get it to put any noise in your noiseholes. What this is, though, is an 'intelligent' wireless music controller. It'll choose music – from your network-attached storage, from your mobile device

or via Deezer's online service – and it'll play it. Intelligently.

OK, I'll bite. What's the 'intelligent' story?

It has 'PatternPlay', which B&O claims will learn what music or radio stations you play at certain times of day. Press that pretty wooden button on the controller and it should play something you're ready to hear. If not, you just lift it up – ta-daa, it's

actually a tablety wotsit – and on the other side is a more conventional-looking aluminium control layout with a LCD screen. But there's more.

More?

More! On that LCD screen, you can display a Mood Wheel. The colours denote emotions. Touch a colour and you'll hear appropriately emotive music from your own collection; but slide an exploratory

finger further out on the wheel and the Moment will go a-hunting on the internet for something new, surprising and/or horrifying. Either way, it's all a bit unique, which is what we'd expect from the Danish design dons. And what we'd want from a £1800 spend – this is Big Daddy B&O, remember, not the relatively affordable headphone and Bluetooth speakers spin-off known as B&O Play.



TOUCH A COLOUR
AND YOU'LL HEAR
APPROPRIATELY
EMOTIVE MUSIC

Advanced string theory IK MULTIMEDIA iRIG 2

The original iRig heralded the start of an accessory revolution. At the time, we thought: "Look at this novelty item that lets you connect your guitar to your smartphone. What a brief laugh we will have with it!" Years later, our phones are linked to everything from dog feeders to drones, and a second iRig has come along to make a mockery of our earlier dismissiveness. This new one works with Android, as well as iPhone, and has 1/4in jacks for both input and output. So you can run your smartphone-sampled guitar sound straight out to an amp, not just straight into your headphones.

€30 / ikmultimedia.com



ALTERNATIVELY...

Samsung Portable SSD T1

Solid-state innards make this Samsung drive credit-card-sized and super-fast, but a 1TB version will probably cost about £500.
from £155 (250GB)



It sees you better than you see yourself LACIE MIRROR

Following in the pensteps of Philippe Starck and Neil Poulton, LaCie's newest designer drive is by French objectsmith Pauline Deltour. Her trademark study of everyday objects is apparent in that the Mirror has mirrored sides, meaning it doubles as a mirror. Gorilla glass should prevent scratches if you take it out, and it's USB-powered so doesn't need a mains adaptor. We would suggest that, while as a mirror it reflects you, its 1TB of storage better reflects you by containing all the files that make up your digital soul. But Pauline's the designer, not us.

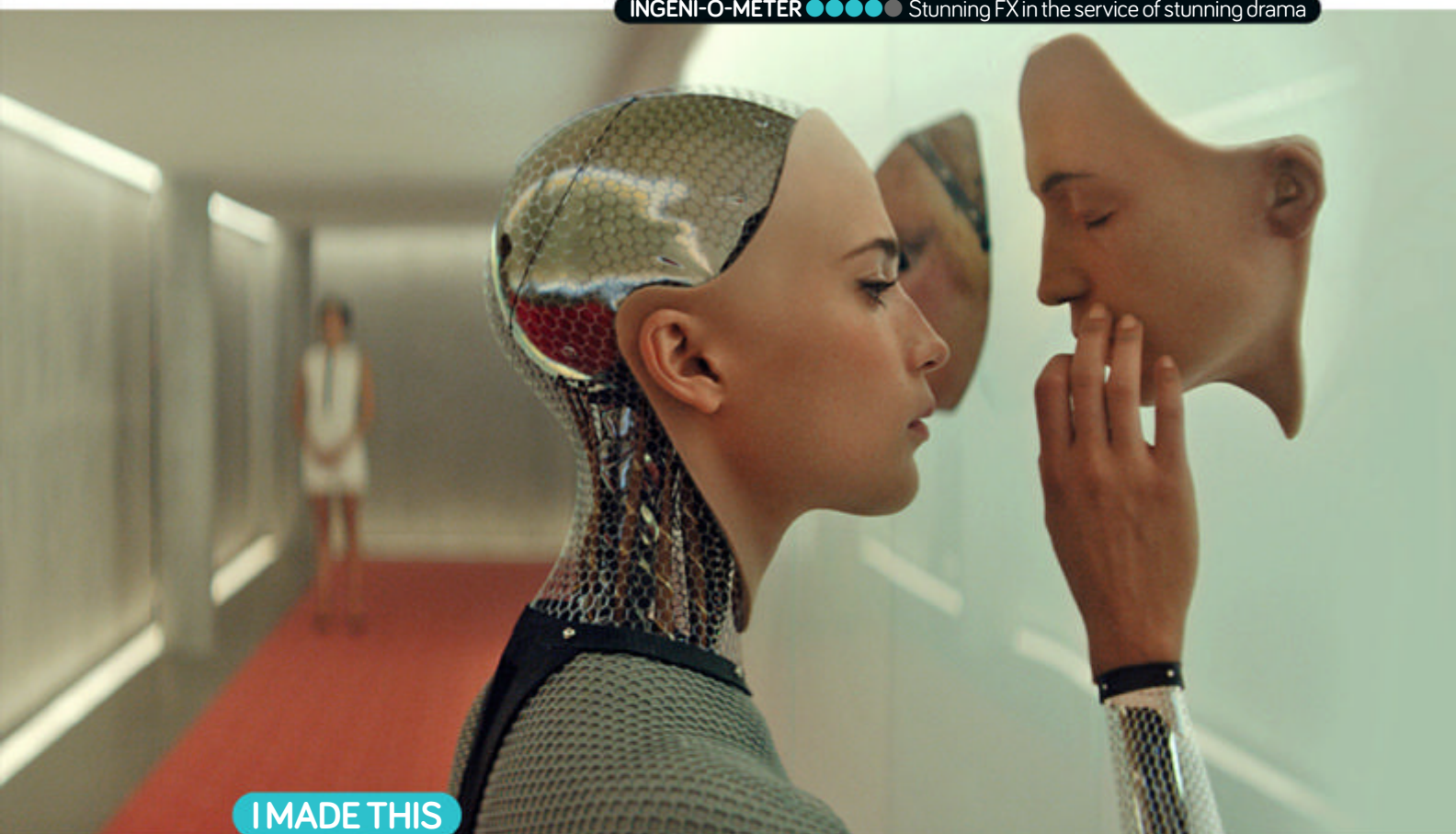
£230 / lacie.com/uk

Where are my EYES!? Oh, there STEELSERIES SENTRY EYE TRACKER

Game streaming is the hot new spectator sport that you don't know about. Instead of playing a game, you watch a live stream of someone else playing the game, while they simultaneously talk to the watching audience, listen to questions and generally make the whole thing look really damned easy. If they're also using an Eye Tracker you can see – in real time – where the über-gamer is looking while they play. The endgame of this is that you improve your own skills by comparing it – so long as you also have an Eye Tracker – to where your eyes are going.

£160 / steelseries.com





I MADE THIS



A SCI-FI THRILLER WITH BRAINS

Alex Garland on directing *Ex Machina*

I've been interested in AI since I made a 'Hello World' program on a ZX Spectrum as a kid. I mean a kind of AI that doesn't exist yet, which is sentient and self-aware. I get fixated on a subject and then a story floats out of it years later. I was in working on the *Dredd* screenplay and this fully formed idea for *Ex Machina* [in which a young coder becomes the human element in a Turing Test] arrived.

I want people to forget that Ava [above] is a robot, while seeing

"I DON'T FEEL ALARMED BY TALK OF CONSCIOUS, SELF-AWARE MACHINES. THEY MIGHT BE BETTER THAN US"

that she's a robot. Humans find it really easy to project emotion onto inanimate objects, let alone animate objects. The hard thing is stopping them from doing it. It's easy to find a child who believes their teddy bear has sentience;

the tricky thing would be finding one who says it's just a bit of old cloth and some stuffing.

The film wouldn't work unless it was supported by Double Negative's visual effects. Ava's a real blend of practical and visual effects. Alicia Vikander [who plays her] wore a prosthetic that created a kind of mask face and a ridge so there was something to map the CGI onto. She also wore a bodysuit, which is the mesh you see over her chest and shoulders. We were actually still tweaking stuff when we shot it.

In the film the back of Ava's head and her neck are robotic, but that wasn't the original intention. It was just going to be her legs, arms and torso – but we realised that every time we went to a close-up of her face it felt like we were doing it just to frame out difficult visual effects, so in the end we put them

into shots that we hadn't intended them to be in.

The people who are funding this technology in a heavy-duty way are Google, Facebook and the big tech companies, because there's real value in computers that can speak in a particular kind of way. Siri is good but it can't really speak, not like a person can. You know in moments that you're not talking to a human.

But I don't agree with Stephen Hawking [who recently said AI could spell the end of the human race]; I think AI's a good thing. If we're talking about AI as a conscious, self-aware machine with an emotional life in the way we have one, what you are saying is that the creation of a new consciousness is something innately problematic. I would say that every time people have a child they create a new consciousness, so I don't feel necessarily alarmed by it. I also think it's perfectly possible that the new consciousness might be better than us in various ways – and if that's the case, why on earth would you want to stop it?





Transmatroller MAD CATZ L.Y.N.X.

"Darling?" says your gender-unspecific partner. "A large wodge of cash has left our account. Was it you?" As a vein throbs on his/her forehead, you explain how you've spent several hundred dollars on pre-ordering a Bluetooth controller for mobile gaming. A second vein now. You forge on: it splits in two, in order to clip onto different phones and tablets. It has dual analogue sticks, shoulder buttons and a mini keyboard! "I got one for each of us!" you say to the back of a slammed door.

US\$300 / madcatz.com



Weaving a web of hi-fis CAMBRIDGE AUDIO CXN

There was a time when any kind of music streaming would send audiophiles running for their caves, clutching their huge, misshapen ears in pain at the lack of dynamic range. But now streaming is all grown up, with suitably high-end kit like the CXN. It'll stream from your own collection or online services at up to 24-bit/192kHz quality, using Wi-Fi, Ethernet XLR or AirPlay, and it also works as a preamp thanks to its 32-bit Blackfin DSP. Just remember to feed it full-fat, high-res files.

from £300 / cambridgeaudio.com

? WTF IS THE IMPECCA ALERT BAND?



Is it a Wi-Fi-boosting Alice band?

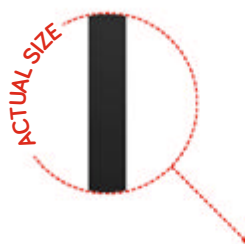
No, and nor is it a Geordi La Forge-style image-enhancing visor. Did you know that during *Star Trek* filming, the prop visor that was supposed to give his character amazing multi-spectrum vision actually caused the actor to walk into everything? And gave him headaches? Them's the breaks. Anyway, it's not that. It's a brainwave-detecting headband. When it senses that you are about three minutes away from falling asleep, it sends a notification to your phone.

What, to wake me up? That'll be bloody annoying.

Yeah, but just think about how pleased your passengers will be when they find out their journey doesn't take a surprise detour through two fields and someone's living room. Reveal! It's a driving device, to make sure you don't overdo it behind the wheel and end up testing your car's NCAP rating while already unconscious. In fact, the Alert Band was dreamed up by someone whose friend was injured after being hit by a dozy driver. But therein lies the problem with a gizmo of this kind: assumed responsibility.

Ah, because the driver who might consider wearing this is the one who's less likely to need it?

Exactly. A professional road warrior – such as Trucker Tobias or Regional Sales Sandip – might argue that their experience is superior to the Alert Band. Whereas the infrequent long-distance driver – Driving Home For Christmas Derek – might be more aware of their susceptibility, but will likely turn their nose up at the US\$250 asking price. So, unless it's made compulsory or built in to cars' safety systems in the future, better file it under 'interesting'. And in the meantime (and forever after), we dearly hope it doesn't occur to our bosses to implement it at our desks...



4K and 4.9mm SONY XBR-X900C

There are many questions you ask yourself when buying a telly, from how many pixels it has to whether you can afford it, but there's just one you should be asking: is it thin enough? Tech law states that a thinner gadget is a better gadget and Sony's new Bravia models are the current champions. Yes they have 4K processors, an Android TV OS and voice search – but the real appeal is their svelte 'floating' frames. At their slimmest they're just 4.9mm deep, which is enough to make an iPhone 6 look chubby. Just don't try putting one in your pocket.

[£tba / sony.co.uk](#)

Bedazzling beats

PIONEER DDJ-SZ-N

An amp that goes up to 11, go-faster stripes, air capsules in your trainers – there's little tangible benefit to any of these things, and yet we pay more because they make us feel zippy. Likewise with this gold edition of Pioneer's almost-professional-level digital DJ deck. It's the same as the black DDJ-SZ – Serato control, dual USB, two different hardware FX panels, CDJ-style LED panels in the jogwheels – but it's gold and limited to 1000 units. And with that glittery finish costing just £100 over the standard version, you'd get at least one. Right?

[£1750 / pioneer.eu](#)



DROP EVERYTHING AND DOWNLOAD...

Evernote Scannable [£free](#) / iOS

That huge pile of bills and statements on your kitchen table is a negative force in your life. You know there's important stuff in there, but dealing with it means getting the filing box out of cupboard and concentrating and blah. New process. Open post the day it arrives, fire up Evernote Scannable. It lets you instantly photo-scan the document, then it flattens, re-contrasts and resizes the image. Share it to Evernote. Throw the paper bill in the recycling. Done. You still haven't paid the bill, but at least the kitchen table is clear.

D3300

I AM SEIZING THE DAY



I AM THE NEW AND EASY TO USE D3300. I will help you to find the perfect settings with my Guide Mode. Even in low light, I capture stunning pictures with my 24.2 megapixels, 11 focus points and ISO 100-12800 and let you share them with my optional Wi-Fi connection*. I am your moments in the quality they deserve. www.nikon.co.uk

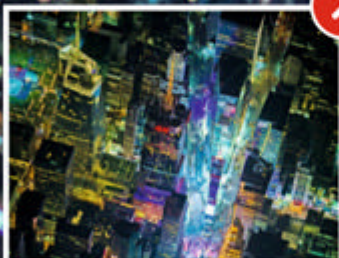
*Wireless connection with smart devices available with WU-1a Wireless Mobile Adapter, sold separately.



For 2 year warranty on any camera and lens kit simply register your new Nikon within 30 days of purchase. Offer applies to UK & Republic of Ireland stock only. Call 0800 587 8472 or visit www.nikon.co.uk/register

At the heart of the image





NEW YORK NIGHT FLIGHT

Sometimes art just falls out of its creator, like a sudden sneeze. Other times, it has to be coerced into being, and photographer Vincent Laforet employs more coercion than most. When his usual helicopter pilot refused to fly at the altitude needed for these shots – 2300m, so high that they were above the airliners on approach to JFK airport – he found a more daring flyer. Next issue: finding a camera and sets of standard and tilt-shift lenses fast enough to overcome the helicopter's vibration and wind buffeting... oh, and a good strong harness. You know, for when he was hanging off the helicopter.

[Image: Vincent Laforet, fineart.laforetvisuals.com]



INTEL UNVEILS BUTTON BRAIN

Intel's tiny new brain for wearables, called Curie, has a processor, sensors and Bluetooth hardware, and is designed to run on very little power. Fancy using it to build your own megaselling wearable wonder? Head to p96 for some inspiration.



GOOGLE ADDS AUDIO FLING TING

Not just video no more, later this year Google will add the ability to fling content from a variety of music apps to networked speakers around your house. Good news: the wireless speaker will do the actual streaming, not your phone. Bad news: no mention of Spotify compatibility. Yet.



CANON SIMPLIFIES YOUR MEDIA MESS

Canon's new Connect Station is a 1TB media bank that wirelessly pinches pics and videos from your camera or phone, then acts as a wireless server that can pipe the content to your TV. It's like the Ghostbusters Ecto-Containment Unit, but for your holiday snaps.

MASKS

Because a face
a day keeps the
doctor away

1 Unicorn Mask

You are Derek. You have a love of the fanciful, yet only just cleaned the blood off your horn after yet another person in your local made the 'long face' joke. You are the occasional stunt double for Bjorn of the vastly popular puzzle game, *Peggle*.

£10 / red5.com

2 Skull Mask

You are Frank. Whilst laboriously cutting, folding and taping the angular masks you obsessively download, print out and make, you often ponder the merits of humans having so many different types of screw head. Surely flat-head should be phased out.

£4.50 / wintercroft.com

3 Zombie Mask

You are Basil. Certain things have changed in your life since your partner left. For one thing, she took all the make-up with her. But that's led to you discovering the convenience of instant-on stretchy zombie masks. You can, and do, fit several in your pocket.

£5 / red5.com

4 Mexican Wrestling Mask

You are Rose. Your love of Mexican wrestling makes you giggle at the comparatively straightlaced moves of Tuesday night tai chi. Your guru frowns. He has seen the shock of red hair poking out of your gym bag and fears imbalance.

£15 / caoba.co.uk

5 Mr Pug

You are Donald. The chin-strap-articulated pug jaw and sorrowful eyes add a certain gravitas to your impression of Ice-T's canine *Tank Girl* character, T-Saint. The effect on your Ronnie Corbett impression is so great, you plan to use it in your next job interview.

£50 / firebox.com

1



2



3



4



5





More than just a pair of bezels

DELL VENUE 8 7000

Dell calls the 8.4in, 2560x1600 OLED screen on its latest tablet an 'infinity' display. Which is perceived as being a good thing. But a truly infinite display would be a bummer. "Where's the Chrome shortcut icon gone? Oh, it's six light years over there. Damn." And just think how much it would weigh! We're being silly. What Dell should be shouting about is how this Android tablet is thinner than an iPad Air 2 at just 6mm. It's also the first tablet with Intel's Real Sense 3D camera tech, giving you Lytro-esque post-processing abilities, and has a 2.3Ghz Intel Atom quad-core chip. Infinitely more exciting than tiny bezels.

£tba (due early 2015) / dell.co.uk

Defenders in the Earth

LAND ROVER DEFENDER

Tinker, tailor, soldier, sailor, hipster, headmaster, kiteboarder and monarch. Defenders have been called into service by anyone and everyone for the last 32 years, but the idea of driving around in a two-tonne oblong of hardened metal has gone out of fashion. Three limited-edition models mark the Defender's final year of production: the beefy Autobiography Edition, the even more swarthy Adventure Edition (pictured), and the classic Heritage Edition. All have unique styling and upgrades, including Windsor leather interiors, which honour an automotive icon but also mean you won't want to fill them with muddy spaniels.

Which, with a Defender, is sort of the whole point.

from £27,800 / landrover.co.uk



ALTERNATIVELY...

For a little more money you can lug some batteries about, in the lovely form of these now-wireless Sennheiser Momentums: Bluetooth and noise cancelling for about £350.



Sippin' on choon and juice

PHILIPS FIDELIO NC1L

Philips' new Fidelio NC1L headphones are something of a mould-breaker: they're the first active noise-cancelling cans that don't require battery power. Instead, they draw energy and audio from your iPhone or iPad through the Lightning port. An on-board 24-bit DAC converts the digital audio into delicious analogue sound. The noise cancellation tech has additional modes for muffling the hum while letting other external noises through – for when you're listening for a train announcement, say – as well as optimised hands-free phone-call use.

£235 / philips.co.uk



? WTF IS THE CONNECTED CYCLE PEDAL?

Well, there's a clue in the name...

Oh, smarty pants. Yes, it's a bike pedal but it's the first connected one we've seen. Within the body are GPS and GPRS chips. The idea is that if your bike moves while you're not on it, it'll send a push notification to the app on your phone. "Zut alors!" it'll say, for Connected Cycle is a French company, "Regardez votre vélo!" The tracking tech isn't lazy when you are on board either: it'll serve up some basic fitness data about distance travelled, though it sounds like the company is more focused on anti-thievery cooperation.

GPS, huh? Sounds likely to be battery-intensive.

Ah, oui, bien sur. But here's clever: the rotation of the pedals (while you're cycling) charges the battery. Isn't that neat? I think we might be spurred to cycle all the faster just to jazz the little blighters up – and on steep hills, with the grinding of the dynamos all too audible over the sound of the blood pumping in our ears, to do a little Gallic cry.

Couldn't le petit miscreant just whip the pedals off, lickety-split like?

La nope. For Connected Cycle has seen fit to give the pedals a unique tool for undoing duties rather than stick with the conventional Allen key or pedal spanner. Which, like similarly unquified locking wheel skewers, is all fine and dandy until you lose the tool. But we're projecting; so far this is just a concept. Allons-y, Connected Cycle!

£tba / connectedcycle.com



A-do run, run, run PARROT ZIK SPORT

These zany headphones not only know how fast your heart's beating, but how many steps you're taking, how long your feet are in contact with the ground and your cadence in steps per minute, thanks to accelerometer tech in those head pads. They also have noise-cancellation so that, via Bluetooth, you hear more of the upbeat music than the outside world laughing at your shambling stagger.

£tba (due summer) / parrot.com



Pump up the volume REEBOK ZPUMP FUSION

Remember the original 'wearable tech' revolution in the '90s? No, not calculator watches, but trainers with bonkers cushioning systems. Nike Air vied with British Knights and LA Gear, but it was Reebok Pump that took kicks to new inflatable heights. Now the tech has returned in these running shoes. Press the button on the heel, and it will slowly lock around your foot for a snug fit. Not quite self-lacing, but the next best thing.

£tba (due 10 March) / reebok.co.uk

LG OLED TV
THE ULTIMATE DISPLAY

**DISCOVER
THE PERFECT
PICTURE**



From the purest black to the most brilliant colours, the new LG Curved OLED TV comes with a unique 4 colour pixel structure that allows you to enjoy the latest action movie or live football match, better than ever before.

LG OLED TV. The Ultimate Display.

www.lg.com/uk/discoveroled





FIRST PLAY THE ORDER: 1886 PS4

As you abseil down the side of an airship high above Victorian London it's hard not to stop and take in the view. You are Grayson (aka Sir Galahad) of The Order: a group of smartly dressed secret agents with even more impressive facial topiary than the editorial staff of *The Chap*.

In this parallel version of the late 1800s, the typewriter isn't the height of technology. As you sneak through the ship offing guards with well-timed takedowns, you're able to communicate wirelessly with your fellow agents, override

onboard power systems using a steampunk-inspired hacking device and pick locks using the more nuanced vibration in the PS4's DualShock controller for feedback. The guns might be ahead of their time but they still feel like blunderbusses: all shock and awe in the flash and bang departments.

The problem is, developer Ready At Dawn has made the scenery so beautiful you're not allowed to damage it. Pots and pans go flying as you fight through the galley but the room itself remains unscathed.

This third-person shooter often looks as if you're playing a cut scene, with a cinematic quality that's the opposite of *GTA V* or *Far Cry 4*'s free-roaming chaos. In Los Santos and Kyrat it feels like anything can happen, whereas *The Order*'s world is so intricately created it's more like you've stepped onto a big-budget film set. Gaming's crying out for tightly scripted, well-told stories, but if you feel like you're merely the director rather than playing the heroic lead, it's in danger of making you want to shout "cut".



REVEALED XBOX RACER CELEBRATES ITS 10TH ANNIVERSARY

FORZA MOTORSPORT 6

Xbox One

It wasn't just Ford's asphalt-eating GT that was unveiled at last month's North American International Auto Show in Detroit. Microsoft took the opportunity to announce another giant of the motoring world: *Forza Motorsport 6* for Xbox One. This year marks the 10th anniversary of the series and Xbox promises big things. 'Promise' being the operative word; very little was actually announced, and even less was shown.

We'll have to wait until gaming megashow E3 in June to see it in motion — and probably until the end of the year before its release — but we do know this: Ford will feature heavily, as the gobsmackingly gorgeous Ford GT will not only grace the front cover but also be drivable in the game. It joins the Shelby GT350 Mustang and F-150 Raptor, all of which are 'first in *Forza*' releases that will appear in *FM6* before they're available anywhere else. It might be the closest many petrolheads will get to these cars, but if *Forza*'s previous form is anything to go by, it should be pretty special. Wanna see more of the cars of the future? Flip to p48.



DLC 3 TOP GAME EXTENDERS

FORZA HORIZON 2
STORM ISLAND

If the thought of *Forza Motorsport 6* (above) has greased your wheels for a bit of racing, *Horizon 2*'s first DLC pack adds a whole new island to tear up. Off-road events are the name of the game as it swaps the sunny Mediterranean coast for the rain-soaked Storm Island.

FAR CRY 4
ESCAPE FROM DURGESH PRISON

Far Cry 4's so massive it's unlikely you've finished it yet, but if you're itching for more, *Escape From Durgesh Prison* is a good place to start. You've been captured but, like all good egomaniacal villains, Pagan Min is willing to let you go if you can beat a set of challenges and do it fast.

ALIEN: ISOLATION
SAFE HAVEN

If your nerves can handle a trip back to the Sevastopol, this expansion puts you in the shoes of a new character called Hughes, who's ensconced safely in the bowels of the ship — but supplies are running out. Can you venture out and complete all 10 tasks without losing your one life?



INCOMING

MARCH

- BATTLEFIELD HARDLINE
- BLOODBORNE
- BLADESTORM: NIGHTMARE

APRIL

- DARK SOULS 2: SCHOLAR OF THE FIRST SIN
- MORTAL KOMBAT X

JUNE

- BATMAN: ARKHAM KNIGHT



MO WEMO

Internet of Things pioneer Belkin has announced a new range of sensors for its WeMo system. Later in 2015 we should see a door/window sensor, a motion sensor, a keychain home-or-not sensor and an innovative alarm sensor that alerts you when any non-connected alarm is going off.



NOT JUST A PRETTY FACE

TV manufacturers are all about the inner beauty these days. Samsung has announced that all of its new smart TVs in 2015 will come with its Tizen OS, as seen in mobile phones and smart watches. Panasonic, meanwhile, will introduce Firefox OS to some of its TVs this year.



NVIDIA DROPS A TERAFL0P

The tiny Tegra X1, Nvidia's new mobile chip, has 256 cores and more muscle than the cast of *Gladiators*. Boasting the same Maxwell architecture as Nvidia's gaming graphics cards, it could bring 4K gaming to your next phone/tablet.



A Bolt of lighting MISFIT BOLT

Smartphone-controlled colour-changing bulbs have been around for ages...and yet still you stall. Why? Is it the money? The Misfit Bolt is available for just US\$50. While the rival Philips Hue bulbs can be bought for the not-much-more-expensive price of £50, they also require a hub, bringing the overall package price up to about £80. Is it the lack of a connectable ecosystem? The Bolt will work with Misfit Shine and Flash wearables, and also with the Beddit sleep tracker to wake you, on cue, with a lovely display of sunrise colours. What's that? You're colourblind? Fair enough, then.

US\$50 / misfit.com



DRAW THIS...

...WITH THIS



An added dimension 3DOODLER 2.0

The 3Doodler won our hearts back in 2013, and after some furious tinkering it's got even better, as things are wont to do. For starters, this 3D printing pen is much smaller than the original, and lighter at 50g. It's also kitted out in a much more stylish aluminium shell, with tweaked internals, superior cooling and dual-speed control. There's also a new JetPack accessory that bumps the running time up to three hours if you're using the more malleable PLA plastic. In a homage to its original success, it's being launched on Kickstarter.

US\$100 / the3doodler.com

**I want the wind in my
hair and the warmth
on my bottom**



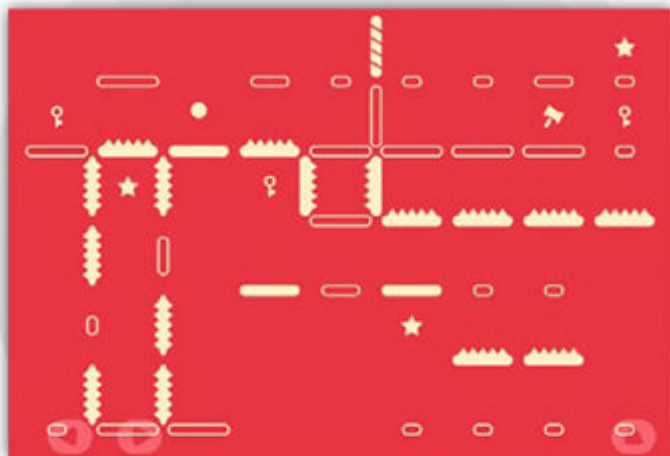
The Power to Surprise

**You make us make better cars.
Like the Kia cee'd GT-Tech.**

We hear you. You want it all. A sexy hot hatch with a 1.6 Turbo-GDi engine, heated front seats and with more gadgets than you can shake a USB stick at. You're so demanding, luckily so are we.

Fuel consumption figures in mpg (l/100km) for the Kia cee'd GT-Tech are: Urban 29.1(9.7), Extra Urban 46.3 (6.1), Combined 38.2(7.4). CO₂ emissions are 171g/km. MPG figures are official EU test figures for comparative purposes and may not reflect real driving results. Model shown: cee'd 'GT-Tech' 1.6 T-GDi 201bhp 6-speed manual.

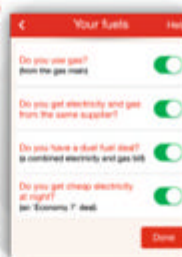
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9



1 Jump

from Efree / Android, iOS

In this simple platformer, you control a ball that bounces in pre-set jumps. Which might not sound much, but once you've been entranced by its hypnotic boinking you'll grow a beard before you remember to stop playing.

4 Simple Planes

E3 / Android, iOS

Physics meets fun... and they get on surprisingly well in this sister app to Simple Rockets. Bodge some wings onto the aircraft of your choice, then give it some appropriately over-the-top thrust, then see if it will fly. Crash. Repeat.

7 Voltz

Efree / iOS

So obsessed are you by ensuring that you're on the best energy, broadband or TV deal, you can no longer wait until you're near a PC. Fortunately, simplifdigital.co.uk has made this app that allows you to check deals on the fly.

2 Star Wars: Knights Of The Old Republic

E7 / Android, iOS

A wedge of *Star Wars* RPG action just slammed down in the Android Play Store. All the fun of the PC version, but now you can play it at work too. Its controls translate surprisingly well to touchscreen.

5 iPlayer Radio For iPad

Efree / iPad

Up until now, listening to BBC radio on your iPad has involved hitting the iPhone app and being annoyed by it changing to landscape and being half-screen size. Write those twin annoyances into the annals of history, for the iPad app is here.

8 Jack B Nimble

£1.50 / iOS

You jump, you whip and you marvel in this retro-hued endless runner. The sound effects and music are suitably atmospheric – there's a touch of *Castlevania* here – and the whole thing is worth the asking price.

3 80 Days

Efree / Android, iOS

A new, Jules Verne-y adventure from the groovers who brought us the book-game hybrid *Sorcery!* That's their exclamation mark, not ours – though we are excited by *80 Days*, we are not prone to over-egging the punctuation pudding.

6 Axy Beat Studio

Efree / iPad

There are quite a few beat-making apps for iPad, but Axy's one of the best we've seen so far. It's simple, easy to use and well designed, and it's also powerful enough to make your own music and export it to Soundcloud, iTunes and others.

9 Hovernote

Efree / Android

If you've envied the floaty notes and floaty windows of your friends' Samsungs, you'll be tremendously excited by Hovernote, which gives you floaty-note capability on any Android phone or tablet.

APP SPOTLIGHT DUET DISPLAY

£10.49 / iPad

You've got an iPad. You've got a Macbook. You've got a Lightning cable. And you've got £10.49! You're good to go, on an adventure where you can use your iPad as a second screen for your laptop. According to the devs, the wired connection is 60fps and lag-free – even if you output in Retina display gloriousness. Mind you, those same devs also claim that a second display makes you "up to 48% more productive".

HEAD TURNER MEETS HEART STOPPER

The new Lexus RC F



One of the most amazing high performance sports cars we've ever created. Naturally aspirated, hand built 5.0litre V8 with 470hp. The next chapter in the Lexus F Story. Discover more at Lexus.co.uk

RC F

 **LEXUS**
AMAZING IN MOTION

RC F prices start from £59,995. Model shown is RC F £60,620, including optional metallic paint at £625.

The MPG figures quoted are sourced from official EU-regulated test results. They are provided for comparability purposes, and may not reflect actual driving experience.

RC F fuel consumption and CO₂ figures: urban 17.5 mpg (16.1 l/100km), extra-urban 36.2 mpg (7.8 l/100km), combined 26.2 mpg (10.8 l/100km), 251g/km CO₂ (35% BIK)

GOPRO ACCESSORIES

You shoot, you whoop and you don't droop: three new action-cam gizmos that have caught our eye



FINGER ON THE TRIGGER



Gripix Wi-Fi Trigger Handle

Doesn't it just make your trigger finger itch, seeing a big red one like that? The Wi-Fi Trigger Handle is basically an ergonomic handle for GoPro's own Wi-Fi remote, which nestles inside and pokes its LCD through a little hole. You can stick the actual camera on top, or wherever you like, and other Gripix accessories can be attached in line.

from US\$100 / gogripix.com

SIX ROTORS OF FUN

Hexo+

Two follow-me autonomous drones completed their Kickstarter rounds in the summer: the AirDog and Hexo+. But now that we've had a chance to see both at the CES show in Las Vegas, it's the Hexo+ we're most excited about. It's bigger and more expensive, but it's got six rotors, which should make it more stable, and it's compatible with any GoPro.

US\$1150 / hexoplus.com

CHECK YOUR ANGLES



Removu R1

The R1's 2in QVGA screen acts as a handheld or wrist-wearable live view remote, and the company is about to launch a GoPro-standard mount cradle for it too, so you can plonk it in all sorts of useful places. In the meantime, they're crowdfunding P1, a rugged case for GoPro's LCD Touch BacPac screen accessory, meaning you can use that as a viewfinder and remote too.

from US\$120 / removu.com

Making soundwaves

SUPERSTAR BACK FLOAT

Okay, so on reflection it wasn't smart to tell everyone you had a Monster in your hot tub. That probably had something to do with the towelling-off-and-going-home craze that swept through your party at around the same time. You should have started by explaining that the SuperStar Back Float's wireless, waterproof, shockproof shell makes it ideal for a bit of social bathing. You could have continued that anyone can stream to the Back Float from their phone via Bluetooth. But they've all left now, so you might as well run a bath and stick on some Otis Redding.

US\$170 / monsterproducts.com



Parks and recreation

ARIEL NOMAD

There are few faster road cars around a track than Ariel's Atom two-seater. But how often are you on a track? Most of the time you're on the road, festooned with other cars and pesky laws. Which is when you think how nice it would be to just smash through a gate and roar off up into the woods. And it's that kind of cerebral exercise that's brought us to this: a sporting off-roader by Ariel, with long suspension travel, chunky tyres and a beefed-up roll-cage but still a lightweight motor and no cumbersome 4WD. Instead, a 2.4-litre Honda engine drives the rear wheels through a limited-slip differential. So if you don't think you have the skills to bring it home again, best leave that forest gate unsmashed, eh?

£tba / arielmotor.co.uk

Wi-Fi coffee: get it while it's hot

SMARTER COFFEE

Everyone loves a good coffee, apart from people who don't, and from March your fantasies of a personal barista can finally be realised – either by hiring a personal barista, or by investing in this, the first app-controlled bean-to-cup coffee machine. Using the iOS/Android app, you can set the Smarter Coffee to wake you as your morning cup o' Joe reaches optimal brewliciousness, or you can have it prep you an espresso as you return home from your daily grind in the office. We'll take a double shot.

£100 / smarter.am



PIZZA DELIVERY MAN PLAN IS A GO-GO

Gogoro Scooter

£tba (concept) / gogoro.com



The Panasonic lithium-ion batteries have a handle for quick pitstops



An electric scooter is the perfect urban transport solution, with only two factors holding it back... namely 'electric' and 'scooter'. But two ex-HTC execs have the answer

● **The issue with electricity is...**

Where does a city dweller get it from? An increasing number of homes and workplaces have electric vehicle hook-ups, but it's still a tiny proportion. Are you going to run an extension lead out of your first-floor flat window

down to the street? No, say Taylor and Luke of Gogoro. You're going to pay them a subscription and hot-swap your battery at roadside Gogoro GoStations. Smartphone apps will help you find the nearest GoStation, and the founders say the system will be smart enough to keep the stations efficient.

● **Which leaves 'scooter'.**

A word with negative associations in the minds of most Brits, it speaks of tracksuited teenagers with holed exhausts. Electric scooters have yet to find a hero, despite such varied efforts as BMW's expensive

C-Evolution and Yamaha's toy-like EC-03. So Gogoro designed its own. They've chosen their friends — Panasonic batteries, Philips LED headlights, Maxis tyres — but designed a lot themselves. Hence: 6400W power, 0–30mph in 4 seconds and a max speed of over 60mph. At urban speeds, it should have a range of about 60 miles. Crucially, because the batteries are part of the subscription deal, the entry cost should be within reach of us norms — though pricing is yet to be announced. This could be the electric scooter revolution we've all been waiting for.

YOU'LL PAY A SUBSCRIPTION AND HOT-SWAP YOUR BATTERY AT ROADSIDE STATIONS

With APC Back-UPS, your digital life goes on...



even when the power goes off

Preserve what's most important to you

Reliable power backup for 24/7 availability

Whether DVRing your favorite show, updating your Facebook status, or playing a live network game, you depend on your home electronics every day, all day. That's why APC by Schneider Electric™ has designed battery backup solutions that protect the constant availability and connectivity you expect... and depend on.

Peace-of-mind protection on two levels

When the power goes out, our popular Back-UPS™ units go to work. They instantly switch your home technologies to emergency power, allowing you to work through brief power outages or safely shut down your systems so you won't lose valuable files — such as digital photos and media libraries. They also feature surge outlets to guard your electronics and data from 'dirty' power and damaging power surges — even lightning. So you get two levels of protection in every APC Back-UPS unit!

Energy-saving insurance for what matters most

Our Back-UPS units protect your home office, digital living and home media applications, notebook computers, DVRs, and gaming application. And since we now offer energy-efficient models that reduce electricity costs through unique power-saving outlets, you can realize true energy savings regardless of the applications you're backing up. Throughout your home, the APC Back-UPS is the cost-saving insurance you need to stay up and running and reliably safeguarded from both unpredictable power and wasteful energy drains.



Keep your electronics up and your energy use down!

ES Series

The ever-popular ES models are priced affordably yet provide enough extended runtime to allow you to work through short and medium power outages. Some power-saving models have been designed to actively reduce energy costs.

The energy-efficient ES Series

The new ES boasts innovative power-saving outlets, which automatically shut off power to unused devices when your electronics are turned off or asleep, eliminating wasteful electricity drains.

BE 700G-UK

- 8 outlets
- 405 watts/700 VA
- Up to 80 minutes runtime
- Telephone/network protection

BE 550G-UK

- 8 outlets
- 330 watts/550 VA
- Up to 55 minutes runtime
- Telephone/network protection



Find out more by downloading our UPS Selector tool
or download our FREE white paper!

Visit www.apc.com/promo Key Code 53083p

APC
by Schneider Electric

Parrot



Parrot

BEBOP DRONE

Heavy weight technology, featherweight design

LIGHTWEIGHT & BUILT
WITH SAFETY IN MIND

FULL HD VIDEO,
STABILISED ON 3-AXES

FIRST PERSON VIEW
PILOTING

Available to buy from

Apple Store

SELFRIDGES&CO

The electronics specialist
maplin



Touchiest Chromebook yet HP CHROMEBOOK 14 TOUCH

You don't buy a Chromebook to impress your friends. Unless your mates are the type who are impressed by subtle refinements of portable computing productivity-per-pound. But were you in the market for a laptop running Google's lightweight, cloud-based Chrome OS, yet were determined to get one packing some heat, you'd get this one. It has a Full HD touchscreen, as well as double the RAM (4GB) and storage (32GB) of the original HP Chromebook 14. The only trouble is, you'd be paying the kind of money that could well get you a 'proper' laptop. Or so your unimpressed friends will say.

[US\\$440 / hp.com/uk](#)

Biggest Chromebook yet ACER CHROMEBOOK 15

Whether or not you bought the HP to impress, its enhancements over a standard HP Chromebook 14 are not immediately apparent to an onlooker. But this Acer, with its ostentatious 15.6in screen – the biggest of any Chromebook yet to grace the crust of our planet – screams its superiority to the sky. Like the HP, it's a 1080p screen, and it has Intel hardware in the form of either Core i3 or Celeron processors – with varying RAM and storage to suit. It's not as light as 'books of yore at over 2kg, but the Acer is aimed at people who want to get stuff done, not just impress their friends.

[from US\\$250 / acer.co.uk](#)



START MENU

The month's best concepts, start-ups, crowdfunded projects and plain crazy ideas



Robot chef

COOKI

[sereneti.com / from US\\$400](#)

What do you get if you cross a robot arm with a motorised tray of ingredients? Dinner, dinner, dinner... Batman! No, wait. What does Batman's mum say when she sees an invention that automatically cooks and stirs the supplied ingredients? "Holy smoke!" No?

Why did Batman spend all his time picking recipes for Cooki to attempt? Because there were no reports of anyone Robin. Oh, forget it.

Status

Seeking funding (Indiegogo)



Got any gum?

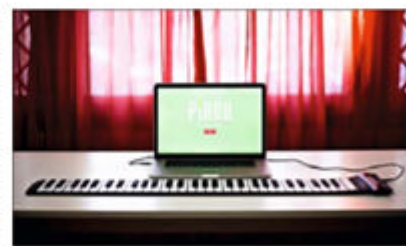
MINT

[breathometer.com / US\\$150](#)

Humans have been surviving with the cupped-hand method since the development of social groups. But now we have Mint, a Bluetooth LE widget that measures volatile compounds that might indicate poor health as well as pongy breath. It also reports on hydration levels, although the paranoia that drove you to test your breath in the first place might mean you need to drink more water.

Status

Funded (Indiegogo)



Key-bored

PIANU

[playpianu.com / from US\\$45](#)

In school music lessons the keyboards, with their whizzy sound effects, were cool. Then we got older and guitars signified Dimebag Darrell and beach parties. You can't plug a keyboard in at the beach. But times have changed (again), guitars are for hipsters and we're fickle, so we're more into this roll-up midi keyboard and its browser-based, *Guitar Hero*-esque tutorial service. For now...

Status

Funded (Kickstarter)



OUR MONTH

What the past 31 days have brought us by way of geekery



I MADE MY NEPHEW CHARGE MY PHONE...

...by betting him a chocolate bar that he couldn't generate 5% of fresh power on Clapham Common's USB-charging outdoor gym equipment. Poor blighter learnt an important lesson about the cost of electricity.



Fraser Macdonald
consulting editor /
supernanny

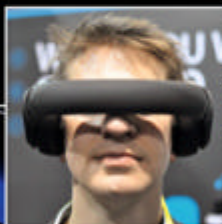


I FELT THINGS THAT WEREN'T THERE

At CES, I tried out Ultrahaptics, which combines Leap Motion with ultrasound so you can touch streams of virtual bubbles that burst on your hand, or wave your way through a 'force field'.



Stephen Graves
online deputy editor
/ Johnny Mnemonic

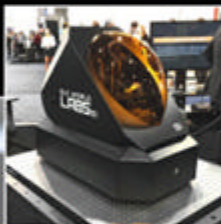


I TRIED OUT VR HEAD- PHONES...

...only to discover that they're actually more like 3D video goggles, owing to their 45° field of view. Still, the Avegant Glyph's tech – which reflects images directly onto your retinas – means they're small, and they look amazing.



Will Findlater
editor-in-chief /
goggle boxer

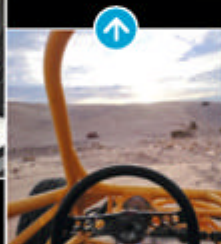


I SAW THE FUTURE OF 3D PRINTING

...and it is absolutely tiny. While standard 3D printers are limited to chunky plastic, the OWL MC-1 has a resolution of one micron – about a tenth of the width of a human hair. It's also rather pricey, but that's tomorrow-tech for you.



Will Dunn
editor / wig printer



I WENT SURFING USA

I tried sand-dune bugging in the rock-scattered Mojave Desert just before CES kicked off in Vegas. My innards were shaken, my brain was stirred, but I still came out with all limbs intact – despite getting very lost and stuck in the sand a few times.



Esat Dedezade
staff writer /
still sandy



I COOKED WITH SCIENCE!

I'm not boasting: my ribs recipe is legendary. But the arrival of an Immersion Circulator demands cooking a batch *sous vide* and then comparing the two. The vacuum-sealed meat is currently halfway through a 36-hour bath.



Tom Parsons
reviews editor /
meat bather

Let the voice of Naim take you
inside the music

naimaudio.com



Mu-so is our first wireless music system. Finely tuned by our specialist engineers in England, its powerful digital brain delivers the most exceptional quality in sound, commanding 450 watts of power through six custom-designed speakers, to create an experience of music that has to be heard to be believed.

Features: Airplay, Bluetooth®/aptX®, Spotify Connect®, UPnP™ (access your stored music), Internet Radio, USB, Analogue and Digital inputs, Apple iOS and Android App for complete control.

Go Deeper



John Lewis | Selected Apple stores | www.apple.com | Specialist Naim retailers

AirPlay is a trademark of Apple Inc.



YOUR MONTH FEB

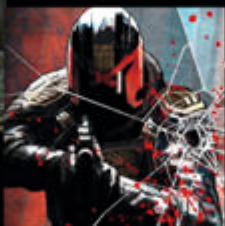
January 2015 is gone. For EVER. Make sure you do more with February, eh?



10

EVOLVE

We went a bit loony for this multiplayer shooter, in which one person plays a huge monster and four people play humans with guns, back in spring 2014. Like all the most tempting games it then got delayed, repeatedly, but... Lo! It has arrived!



12

DREDD: URBAN WARFARE

"I am the sequel!" As talk of a follow-up to the film (about a man whose only human face is a chin) dies away, you can tie up some of the loose ends with this Rebellion-published graphic novel.



12

THE LONDON BIKE SHOW, EXCEL LONDON

As a nation, we rock the bicycle. Olympics, Tour de France, World Cup Downhill – the Union Flag has topped them all in the past few years. In 2015, though, who knows? Feel the buzz anew in the aisles of the year's first two-wheeled show.



13

ABSOLUTELY ANYTHING

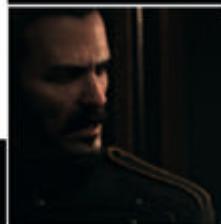
Terry Jones directs this film about an everyday norm (Simon Pegg) who is granted superpowers by aliens, voiced by the other Pythons. The late Robin Williams plays his dog. Apparently this project took a long time to get funding.



16

GAME OF THRONES: SEASON 4

No need to be ashamed – it's axe-rattlingly good stuff. And having romped your way through seasons one to three, it'd be remiss of you not to fire up the Blu-ray player once more.



20

THE ORDER: 1886

In which you play an embittered Saturday shopper in Argos, trying not to brain the dithering holder of order no.1886. Okay, actually it's a Victorian-esque barrel-o'-bullets, Zeppelins, monsters, mad scientists and moustaches.

WIN



TOTAL
PRIZE
VALUE
£951

WIN A MOBILE PRODUCTIVITY PACKAGE WITH MICROSOFT PC ACCESSORIES

Tired of lugging your laptop around all day? Well here's your opportunity to get truly mobile thanks to Microsoft PC Accessories. To celebrate the launch of Microsoft's Universal Mobile Keyboard, we're offering one *Stuff* reader the chance to make the most of its compatibility with iOS, Android AND Windows by bundling one together with a device running on each: an iPhone 6 (RRP £540), a Sony Xperia T2 Ultra (£162) and a Linx 10 Windows 8.1 tablet (£169). We're even throwing in a year's subscription to Office 365 Personal, so you can access, edit and share files from Microsoft's productivity tools virtually anywhere.

All of this comes together perfectly thanks to Microsoft's new Universal Mobile Keyboard (£79.99), which connects to your devices via Bluetooth and lets you swap between them with the flick of a switch. Offering a six-month battery life, it has a detachable protective cover that doubles up as a stand for your phone or tablet.

HOW TO ENTER

Feeling productive? Go to **stuff.tv/win** and just answer the following question:

THE MICROSOFT UNIVERSAL
MOBILE KEYBOARD IS
COMPATIBLE WITH
WHICH OF THE
FOLLOWING PLATFORMS?

- A** ... Microsoft Windows
- B** ... Apple iOS
- C** ... Google Android
- D** ... All of the above

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WHERE WE'RE GOING WE'LL NEED ROADS

The machine that made the modern world
is about to remake the future, and this is how:
five predictions for the car of tomorrow

Words: Will Dunn



p60

IT'LL
STILL BE
REALLY,
REALLY
FAST

YOU'LL
ONLY
DRIVE IT
WHEN YOU
WANT TO

p50

p56

IT'LL BE
GESTURE-
CONTROLLED

p58

IT'LL
BE A TAXI
THAT
THINKS
FOR
ITSELF

p54

IT'LL
RUN ON
SPARKS
AND
SEAWATER

ONE

YOU'LL ONLY DRIVE IT WHEN YOU WANT TO

Fully self-driving cars are a way off, but 'piloted' driving means you drive the fun stuff, then let the car do the work on the boring bits

FRICKIN' LASER BEAMS

The Prologue also sports Audi's new laser headlights, which offer twice the visibility when used as high beams.

HANDLE CAREFULLY

No, they haven't forgotten the door handles: just touch the right spot and invisible sensors will pop the door open.



AUDI PROLOGUE

While many concept cars don't have working components or even engines, the Prologue is a real, driveable taste of the luxury two-door A9 that will soon top the Audi range. A 605bhp, 4-litre V8 pushes the Prologue up to 60 in a blistering 3.7 secs, but once you've had your fun with its ferocious power you can press a pair of buttons on the steering wheel and let the onboard AI deal with the motorway traffic.

This is what's known as piloted driving: it's not a fully autonomous Johnny Cab that can tool around entirely without a human – though it can, thanks

to a partnership with LG, be hailed over short distances by a smartwatch. It's a further evolution of technologies that are already available, such as automatic braking and lane detection. Pairing a bonnetful of sensors with a bootload of computing power, the Prologue learns about its surroundings and updates its brain via an always-on cloud connection.

And the techfest doesn't stop there: inside the car there are four bespoke high-res touch displays, which replace all the dials and buttons. There's even a curved touchscreen, used to control media.

GET THE TECH NOW

Cruise

This is the first aftermarket robo-drive kit. With a sensor pod that looks like an aerodynamic Kinect on the roof and a computer in the boot, the Cruise RP-1 will add an autopilot to control your steering and speed in an Audi A4 or S4... but only if you live in California. Still, it's a start. getcruise.com



TESLA AUTOPILOT

As the company that has done more than any other to push car-tech forward in the last few years, it's not surprising that Tesla is champing at the bit to turn its swanky electric cars into swanky self-driving electric cars. Founder Elon Musk announced in October that every new Model S would ship with the sensors and firmware enhancements to effectively drive itself on the motorway. Lane Keep Assist (the car auto-steers to hold its lane) and Speed Assist (the car auto-accelerates and brakes) are now active on every new Model S, and more advanced features, such as the car autonomously coming to meet you at the front door, are to be added as software updates.



BOOT LOADER
The PC in the Prologue's boot performs 8 billion operations per second while driving, and learns about its surroundings.



I RACED AGAINST A ROBOT - AND LOST



TOM PARSONS
REVIEWS EDITOR

On a dreary Wednesday morning at the Ascari racetrack in southern Spain I meet Bobby, one of two driverless Audi RS7s that are, but for some go-faster graphics and a boot computer, standard production cars. Bobby's driving processors are contained in a box that's little bigger than a PS4, and without coaching he doesn't know what to do on the track, so the engineers drive him a few laps to give him a feel for the boundaries, then he's ready to take me for a spin.

Bobby is not slow off the line, cautious on the brakes or timid through the corners. As we race towards the first chicane I pray that he won't

do a Windows Vista and bug out right when he should be hitting the brakes. As it turns out, he leaves it far later than I'd have the *cojones* to, then hammers the brake hard enough for the car to squirm as its not insignificant weight shifts to the front, but with some very quick adjustments to avoid skidding.

Knowing a rain shower was on the way, Audi's engineers dialled the robo-RS7 back a little before we set off, but Bobby is still terrifyingly fast – swinging into corners with no regard for the lunch I've just eaten and accelerating as if jabbed in the backside with a hot poker.

The lap is completely automated – the engineer sitting in the driver's seat holds a kill switch just in case, but it's entirely Bobby's doing. I feel like I've been driven by

a human racing driver, one trying hard to scare the tapas out of me. And now I have to try to beat his time.

Inspired by my robotic rival I try to brake hard and late, but my human safety protocols won't let me take it to quite the same limit. I cross the line, exhausted, in 2mins 22secs – two seconds slower than Bobby. I'm no racing driver, but I wasn't slow around Ascari. There were others present who did beat the robot, but only just.

Later, an engineer tells me I should try racing Bobby's brother, Ajay. Despite being identical cars with identical hardware, software and mapping, they have different personalities – one drives more aggressively than the other. Spookily, despite a huge amount of expertise, they don't know why.

1 SUPER NAV

The RS7's GPS is 100 times more accurate than the one in your car. It can detect deviation from the line by as little as a centimetre.

2 FAST COMPUTER

The RS7 has driven with precision at speeds of up to 150mph, and in 2010 a human-free Audi TTS drove the Pike's Peak challenge.

3 SENSOR ADVENTURE

Infrared and ultrasonic sensors, 3D cameras, radar, video cameras and collision detection give the RS7 six senses.

GET
THE
TECH
NOW

Project CARS
Yes, it is fairly difficult to get hold of a semi-sentient car and a team of skilled engineers for your weekend racing, but you might as well train up just in case. **Project CARS** offers the chance to race AIs on painstakingly realistic tracks and it even supports virtual reality displays. projectcarsgame.com



SPIRIT CHASER

The 'ghost car' is something you're probably familiar with from games, giving you a transparent pace-setter based on your previous laps. A concept design by Jaguar Land Rover brings the ghost car to real roads, via the magic of AR. Using a windscreen that's also a transparent display (like a larger version of the heads-up display found in the BMW i8), a virtual car is made to appear on the road ahead, complete with a 'follow me' sign for faultless navigation. We'd rather use it to improve our lap times, though.

It also begs the question of what other game tech could be applied to real-world tracks. Could *Forza*'s 'Drivatar' function, which creates a racing AI based on your driving patterns, be used to imprint an A7 with an F1 driver's personality?



TWO

IT'LL RUN ON SPARKS AND SEAWATER

As the world realises another 30 years of fossil fuels might not be the greatest idea, new power sources are jostling for a place on the starting grid

THINKING CAPS

Two large, high-performance capacitors dump large amounts of energy into the motors, giving a 0-60 speed of just 2.8 seconds.





NANO FLOW CELL QUANT

Don't fill your Fiesta with 'the power of the ocean' – you'll corrode your petrol tank and your carburettor will get blocked by a mackerel. Only the Quant can draw power from seawater – although 'saltwater' is accurate, as we're guessing they don't go to the beach to power up this gull-winged concept. There's a lot to like about this four-seater, from its curvy wooden interior to its Android navbrain, but the real magic is its battery.

For electric cars to take over, they need range. Tesla is looking to solve this by replacing petrol

stations with its Superchargers, but NanoFlowcell's battery claims a range of up to 600km. The technology for redox flow batteries has been around for a while, but so far no-one has turned it into a viable power source for a car. If the Quant succeeds, it could usher in a new era of electric cars.

Flow batteries are powerful, but unlike lithium-ion batteries, they don't wear out after a few years of being recharged. They are eco-friendly, can be made from cheap materials, and you can fill 'em up like a petrol tank.

GET
THE
TECH
NOW

Kraftwerk
We've seen fuel cell chargers before, but they rely on bespoke hydrogen fuel cartridges that are expensive or difficult to recharge. The Kickstarted Kraftwerk charger runs on lighter fluid, turning it into a 2W current that will recharge an iPhone 11 times from one filling.

**US\$100 /
hellokraftwerk.com**



HONDA FCEV

Another alternative to lithium batteries – and one that many more companies are banking on – is the use of fuel cells. The FCEV's small, power-dense cell offers an estimated range of around 300 miles, but it doesn't need charging like a battery. Instead you refuel it with hydrogen, a process that takes about as long as topping your old dinosaur-burner with petrol. While there are relatively few hydrogen refilling stations, Honda also makes a home energy station that takes your natural gas supply and reforms it into hydrogen, which it then uses to supply your home with heating and power as well as refilling your car's fuel cell – halving your energy bills in the process.



1.5-YARD DASH

Inside, the entire dash forms a 1.25m display, running an Android operating system. Great for really, really widescreen films.

ELECTRO LITE

By pumping out used electrolyte solution and pumping new 'charged' solution in, the Quant can be refilled like a standard car.



FUTURE POWER

ROADS THAT CHARGE

With inductively charging toll roads, you'd be able to keep driving while your car powers up. Sounds like sci-fi? In South Korea, there are already a few roads that inductively charge electric buses.



JET ENGINES

The Jaguar C-X75 concept, announced

in 2010, used a pair of diesel-fed jet engines to power its four electric motors, offering huge amounts of energy from a relatively small amount of fuel.



USING LESS POWER


While it's not likely to take off in the US, some auto-makers are focusing on making smaller, lighter and more aerodynamic cars that just need less energy, like the superb VW XL1.



THREE

IT'LL BE GESTURE- CONTROLLED

Car designers walk a fine line between keeping us entertained and keeping us safe. The answer is to go hands-free, with a gesture-controlled cockpit



BASS FOR YOUR ASS
The Touch R's seats are fitted with actuators that give the impression of thumping bass without annoying everyone in a mile radius.



VW GOLF R TOUCH

For a car that's supposed to let you keep your eyes on the road, VW's infotainment showcase offers a lot of pixels to not look at. There's a huge 12.8in main screen for Apple CarPlay or Android Auto, an 8in screen below that for climate control and volume, and the instrument cluster is itself a 12.3in display. What's more, every switch, button and dial has been replaced by proximity-sensing touch surfaces.

The idea is that swipes and gestures are easier, and therefore safer, than buttons and dials. So, rather than fiddle with a dial to zoom into your

sat-nav map, you swipe two fingers across the multi-touch slider that separates the two central screens. Commands are met by haptic feedback, so you know you've clicked or swiped without taking your eyes off the road.

Better yet, you don't actually need to touch the controls. A 3D camera in the roof recognises hand gestures: waft your hand near the sunroof and it'll open; wave in front of the stereo and it'll fast-forward or rewind. Which is great until a bee gets into the car and you start performing an impromptu DJ set in your attempts to shoo it out.

GET THE TECH NOW

Navdy

If you can't wait to start air-swiping your calls and wafting your maps, there's always Navdy, described by its makers as "like Google Glass, for your car".

Like the Garmin HUD it projects information onto a head-up display, with the added bonus of hands-off gesture control.

US\$320 / navdy.com



NO MORE PLAYLIST PUNCH-UPS

Self-driving cars may eliminate the problem of other people's awful driving, but there's still the problem of other people's awful taste in music. Or perhaps not, if Harman's Individual Sound Zone (ISZ) technology takes off. By combining the vehicle's existing speakers with added headrest speakers and some flat speakers within the car ceiling, ISZ can create a 'halo' of sound around each passenger's head, so you only hear your own playlist and none of whatever ghastly earvomit the Simply Red fan to your left is listening to.

It's not as isolating as headphones, so you can still hear other people's voices to play I Spy and the Eddie Stobart Game.



BUZZ SWIPE-GEAR

The 8in touchscreen to control the air-con uses subtle haptic feedback that makes it feel like you're pressing a button or a slider.

PARK LIFE

VW's new Trained Parking uses a camera to identify a space, move up to it and park, all with minimal input from the driver.

APPLE CARPLAY OR ANDROID AUTO? BOTH, ACTUALLY...

Your choice of phone has in the past restricted you to certain speakers, accessories and services, but thankfully it doesn't look as if it'll make any difference to your motor. At CES last month VW, Audi, Parrot, Kenwood and Pioneer all announced car tech that supports both CarPlay and Android Auto. Pick of the crop for us was Parrot's RNB6, a 7in HD head unit running Android Lollipop (but supporting CarPlay), that works with front and rear cameras, parking sensors and vehicle diagnostics to provide a seriously geeky ride, even before you start playing with the sophisticated audio tuning, Shotgun!



FOUR

IT'LL BE A TAXI THAT THINKS FOR ITSELF

When all cars drive themselves and algorithms can predict when and where you'll need an autonomous cab, cars will become like hotels: a service, not owned, but hired

AFTER YOU
LED displays, a laser
projector, sounds and
speech allow the Merc
to communicate with
pedestrians and
other drivers.





MERCEDES F 015

If the car of the future really is an artificially intelligent Uber, there are bound to be different levels of service. At the bottom will be robotic Dacia Sanderos that make stopoffs for Amazon deliveries. At the top, there'll be this reflective scoop of luxury.

The F 015 is basically a small first-class lounge on wheels. The seats face each other, as those rich enough to sit inside wouldn't dream of doing anything so servile as driving, but passengers can still act as backseat drivers, instructing the car via huge touchscreens.

The benefits aren't just for those inside, though: if it spots

a pedestrian at the edge of the road, the F 015 will halt and project a pedestrian crossing, like Sir Francis Drake laying his cape across a puddle.

While the engine — a hybrid electric powertrain with a fuel cell for longer journeys and batteries for around town — and the self-driving tech are clever, the most forward-thinking thing about this car is how Mercedes says it will be used. It's a 'mobile living space' rather than a means of transport: somewhere to watch films and have meetings and sleep while, incidentally, also going somewhere.

GET THE TECH NOW

Four English towns — Milton Keynes, Bristol, Greenwich and Coventry — will be testing driverless cars this year. They'll mainly be slow-moving pods rather than super-luxury robo-coupés but, unlike the flashier models, they'll be usable by the public. That should take the sting out of realising you're in Milton Keynes.



THE GOOG-MOBILE

When the Giant King of the Internet builds a self-driving car, it's natural to have high expectations, and it's equally natural to be bemused when the motor in question turns up looking like the plastic wobblemobile you trundled around the playground in as a toddler. But Google's prototype takes vehicular autonomy to its full extent: the only human control is a button, and given Google's expertise in voice recognition, it's unlikely that even this will remain in later versions. Its cutesy grin belies the formidable tech lurking beneath: on top of GPS and camera positioning, 64 lasers scan the surroundings in 360°. Unsurprisingly, auto companies are quietly battling to get Google's tech into their machines.



LOUNGE LIZARD

The interior is described as a 'luxury lounge', with walnut flooring, nappa leather seats and a nice little table for your glass of Riesling.

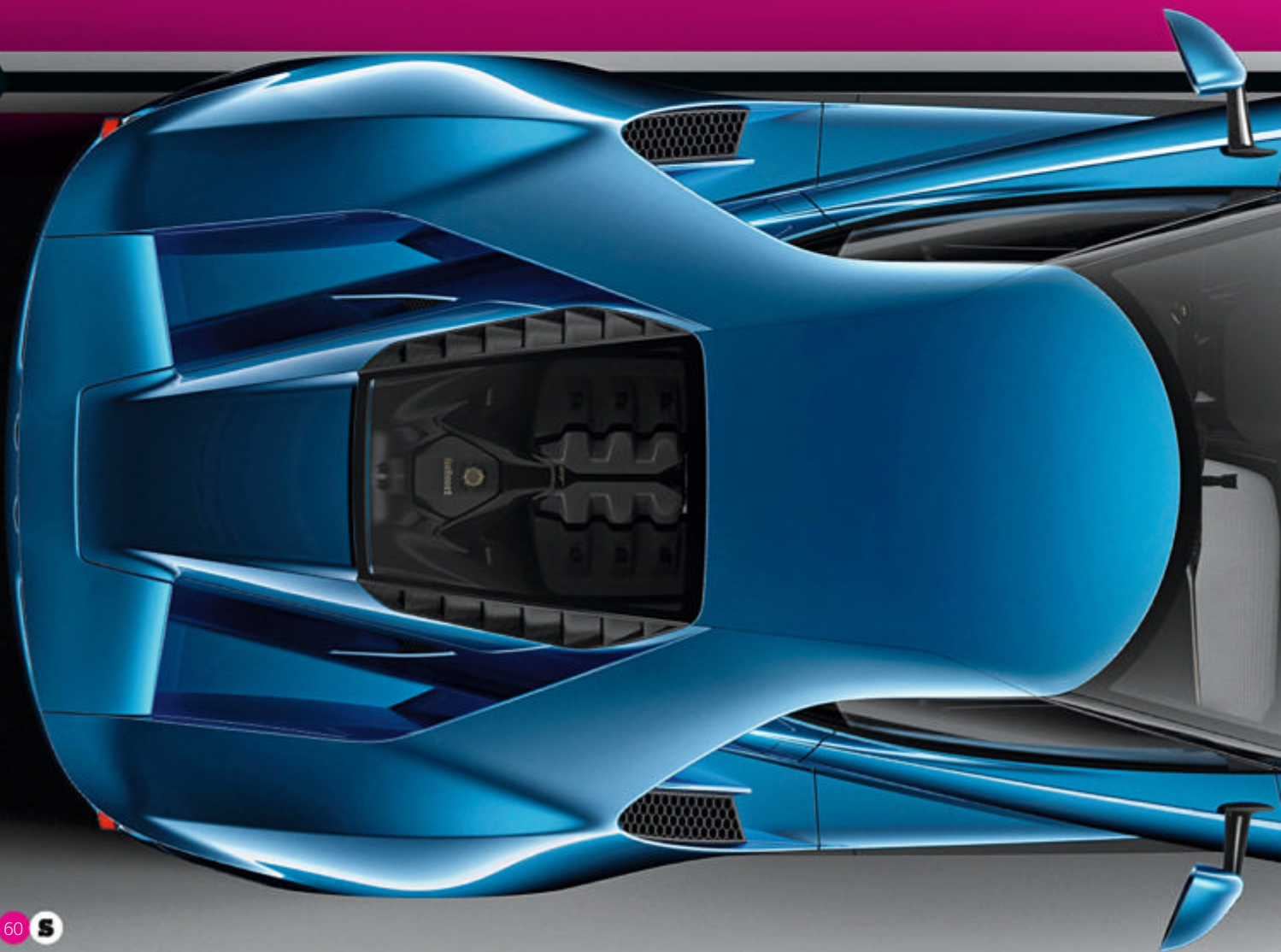
SCREEN IF YOU WANT TO GO FASTER

Gestures and touch controls on the six large interior displays allow you to navigate and select driving styles.

FIVE

IT'LL STILL BE REALLY, REALLY FAST

As motorways become automatic and cities become no-drive zones, the car of the future will live on the racetrack and the winding country road





FORD GT

You wouldn't think a 600bhp supercar would allow the word 'eco' within 300 feet of the scoops and blades of its carbon fibre bodywork, but the new GT's engine is a big, bad, bodybuilder brother to the EcoBoost engines found in today's Fiestas. Of course, if you were to try to put the GT's 3.5-litre V6 in a small car it would probably punch its way out and stomp off on its muscular pistons in search of a polar bear to eat, but that's what cars like this are about.

When all the boring driving is done by computers and every journey from A to B is done

under clean, green power, there will still be cars that want to go from A back to A, repeatedly, very quickly indeed.

The GT is both a pedigree hound and a mechanical wolf from the future. It's a clear descendant of the original GT40, which was designed and built in Britain and dominated Le Mans in the 1960s, but it's also festooned with tech, including a body that's mostly carbon fibre and a rear wing that actively angles and positions itself for aerodynamic effect. And, like previous GTs, it promises to leave a trail of frustrated Ferraris behind it.

GET THE TECH NOW

Dash

You might not have the team of experts and the giant pool of money required to run a proper racing outfit, but you can improve both your driving and your car's performance using the Dash plug-in module and app, which give advanced feedback on both your car's vital signs and the amount of fuel you're using.

US\$10 / dash.by



HONDA NSX

Unveiled (as the Acura NSX, its name in the US) on the same day as the Ford GT, Honda's new supercar is, like the GT, the son of a superstar. The original NSX had some help, to be fair — Honda enlisted Ayrton Senna for final testing and design tweaks — but the long-awaited new NSX promises to uphold the family name.

It's a hybrid, but not in the Prius sense: like the BMW i8, it has front wheels driven by a pair of electric motors, but there's also a third motor that fills in the gap between takeoff and the huge whump of power delivered by the twin-turbocharged V6. Honda says it'll be even quicker off the mark than crazy-acceleration, all-electric cars like the Tesla Model S. Phew.



FAST

Ford hasn't published what its new baby can do yet, but expect a 0-60 of around three seconds and a top speed of over 200mph.

LIGHT

Because the chassis itself is made with carbon fibre, the GT will rival the McLaren P1 and Ferrari 458 for power-to-weight.

OUTTA SIGHT

It'll be late 2016 before the first of the new GTs rolls onto public roads, at an estimated price of around £250,000. Better start saving.

FASTER STILL

FLYING CARS

The ultimate answer to your traffic woes is to rise above it and hoon along in a straight line at 150mph. It's still early days, and the Aeromobil 3.0 is more of a drivable plane than a flying car, but the dream of a 3D commute remains strong.



HYPERLOOP

Why go in a straight line at 150mph when you can go in a straight line at 760mph? This insanely fast vacuum tubeway, currently being considered by Tesla mechwizard Elon Musk, is like air travel without the pesky up-down bit.



OR YOU COULD JUST STRAP YOURSELF TO A JET ENGINE

That's the basic premise of Bloodhound SSC, a 'car' being developed in Bristol to break the 1000mph barrier. With 135,000bhp and wheels of solid aluminium, it's a nippy little runner.



Let off some Steam

It was supposed to be a Steam Machine, but when Valve put a delay on those, Alienware decided the world shouldn't have to wait for its apparently console-killing, lounge-loving computer

from £450 / alienware.co.uk

We've long been promised a PC that would out-console dedicated games machines, but it's never really happened. That's why Valve's Steam Machine initiative was (and still is) so exciting. But with no release date in sight, Alienware has decided to go it alone with the Alpha, a PC that combines a price, form and specification that puts it just about in Xbox One and PS4 territory with a bespoke, Windows-bypassing UI and lounge-TV-friendly Steam Big Picture Mode. It even comes with an Xbox 360 controller rather than keyboard and mouse.

So is this the computer to finally kill the console? As Steam currently has around 4000 games and 100 million active players, it sure plays a good numbers game...



1 A screenless laptop

The Alpha is seriously compact – about two-thirds the size of the PS4, although it does need a separate power brick. To get it that dinky Alienware has used mostly laptop components and a bespoke Nvidia graphics card. We tested the cheapest model, which comes with an Intel Core i3 processor, 4GB of RAM and a 500GB HDD.

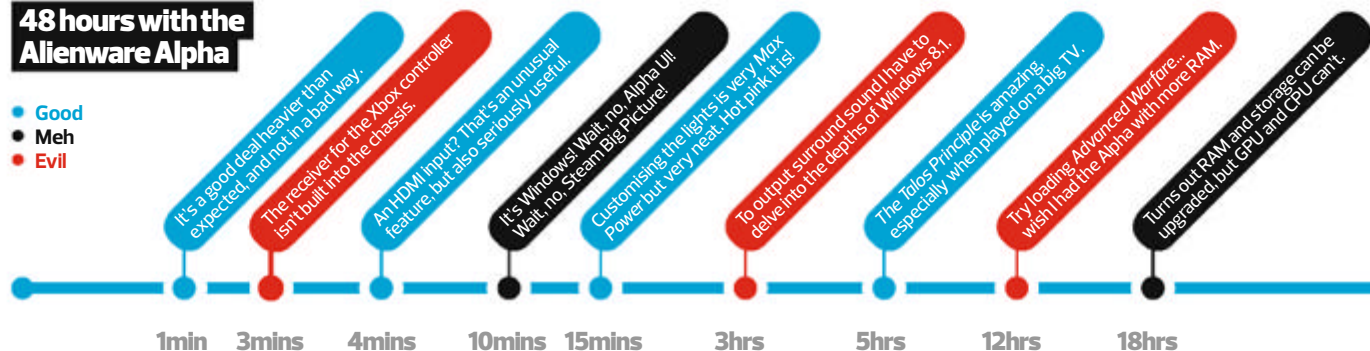
2 Russian doll OS

Startup is a bit like *Inception* but with OSes. First you see the Windows 8.1 screen, then the red Alpha UI. Click the big 'Launch Steam' button and Big Picture Mode fires up. Overall it takes about a minute and a half to get to your games. Windows does intrude with a pop-up occasionally, but it's hidden most of the time.

3 Custom light show

Not sure about the blue highlights of the Alpha's chassis? They're lights and you can change them to almost any colour you like. The array of inputs is mostly what you'd expect – lots of USBs and an HDMI output for connection to your TV. The HDMI input is unusual: it's a pass-through, so you can save one of your TV's inputs.

48 hours with the Alienware Alpha



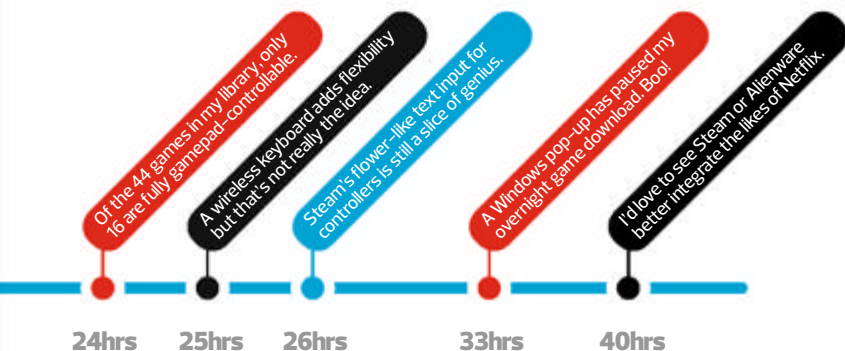


4 A bundle of fun

Of those 4000-ish games on Steam, 10 come free with the Alpha in the form of download codes. They're not all worthy of your time, but *Metro: Last Light* and *Payday 2* really are and would cost you £40 if bought separately. Consider that the PS4 and Xbox One don't include any free games, and that's a real bonus.

5 The upside of Windows

The advantage of having Windows in the background is compatibility. More games are compatible with Windows than Steam's own OS, and when you want to you can enter desktop mode and do all of those usual computery things using the sticks and buttons of the gamepad. Steam Big Picture's own web browser is pretty neat too.



Tech specs

Processor Intel Core i3-4130T (i5/i7 optional)

RAM 4GB (8GB optional)

HDD 500GB 5400rpm SATA 6GB/s (1TB/2TB optional)

GPU Custom Nvidia GeForce GTX GPU with 2GB GDDR5

OS Windows 8.1 with custom launcher and Steam

Dimensions 76x203x203mm

Weight 2kg

Gaming the system

The proof is in the gaming, so just how does the Alpha compare to the PS4 and Xbox One?



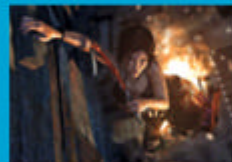
■ Far Cry 4

Set *FC4* to high detail and it looks and performs very much like the PS4. It's just a little sharper, but also just a little less smooth during general exploration. In our book that's honours even.



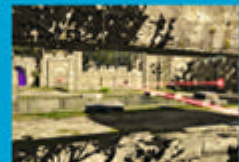
■ Advanced Warfare

Uh-oh! Try to run the latest *Call Of Duty* and you're warned that the Alpha doesn't have enough RAM. Sure enough, it's an unplayable stutter-fest, even on the lowest graphics settings.



■ Tomb Raider

Lara performs even better on Alpha than PS4. Set to 'high' and you'll be greeted with a little more detail – and it's combined with slightly smoother frame rates. Even ultra settings are playable.



■ The Talos Principle

Our favourite game on PC at the moment isn't even on PS4 or Xbox One yet, but it's so good it needs a mention. It generally looks and plays great on the Alpha, but there is quite a lot of screen tear.



The Alpha is definitely the most console-like PC there's ever been, but that doesn't make it a console-killer. The UI experience is too disjointed, loading times are too slow, and as games will be optimised for consoles for years to come the Alpha will be left behind. It's nearly there, though, and there are so many games. @TomParsons

STUFF SAYS ★★★★★

The most console-like computer ever, but the PS4 and Xbox One still have the edge in the lounge

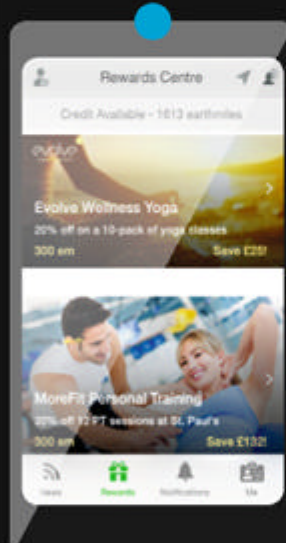
App:roved

FOR
HEALTH
POINTS

● Earthmiles

Endorphins and a non-embarrassing waist size are good rewards for exercising, but what if you want a monetary incentive too? Enter Earthmiles. It connects to fitness trackers such as Strava, converts your workouts into points, then gives you a list of health-conscious places to redeem them. It's a great idea, but our 'rewards' weren't any better than sweat-free offers from Groupon. If they sign up some better partners, it could be a winner.

Stuff says ★★★☆☆
Efree / iOS, Android



FOR
LAZINESS
GUILT

● Google Fit

As the big G's rival to Apple's Health Kit, this app aims to track all your fitness-related activities on your Android. It does a pretty good job, although testing this over Christmas led to some pretty sad stats, with a Boxing Day low of 6mins of movement. It also tallies all your workouts from your other apps and fitness trackers, so isn't dependent on you carrying your phone everywhere (try it, you might like it) – but it doesn't always interpret the data properly.

Stuff says ★★★★★
Efree / Android



FOR
YOUR BRAIN
CELLS

● Peak: Brain Training

Brain training is far from new, but Peak does it better than any other app we've used. It's all in the simple genius of its quickfire games, the clean, colourful graphics, and the personalised training programme that's designed to make you sharper and more focused. Whether it will regrow all those brain cells we've brutally murdered over the years remains to be seen, but we've subscribed for the bonus content to give it a good shot. Miracles can happen, right?

Stuff says ★★★★★
Efree (in-app purchases) / iOS

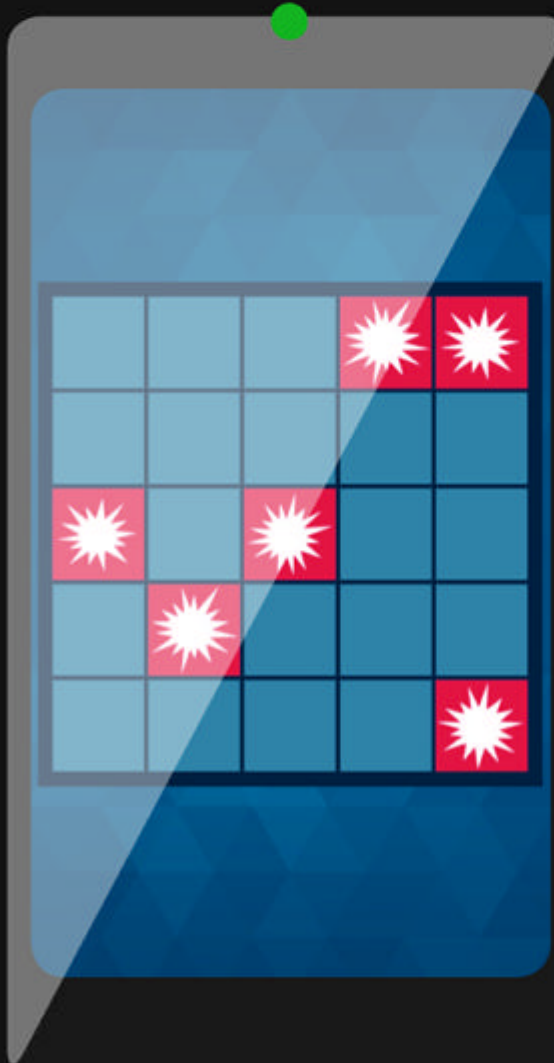


FOR
LIFE
HACKS

● Workflow

This allows you to create 'apps' that set in motion sequences of activities. Make a homescreen icon that prepares an email template with your daily to-do list. Or have one that auto-crops photos as they're taken. Or you could save an idea straight to Evernote. Or find out where the nearest coffee shop is, what it looks like and how to get there (that's one of the pre-prepared Workflows). The learning curve is steep but it's a useful, powerful tool that's fun to play with.

Stuff says ★★★★★
£1.99 / iOS





● Google Earth

Not sure where to explore next? Swipe your way around a zoomable world, like a digital Superman, and then zero in on a place to visit. (Or just use the search field, like a normal person.) Overhead views of landmarks, Wikipedia entries, tons of photos, and links to nearby sites of interest are then all yours for the taking.

Stuff says ★★★★★
£free / Android, iOS

Mini meme



TOUCH-SCREEN TOURIST

Why bother with expensive plane tickets and hotels when you can see the world on your phone or tablet? Here's *Stuff's* guide to sightseeing from an armchair



● Google Maps

Google Maps isn't just about directions – increasingly, it's about discovery (and not in the sense of snooping about the nice bits of town). It now moves beyond the road, enabling you to wander around Gombe National Park, visit the Pyramids and navigate the Colorado River. Google 'Street View Treks' for more sites.

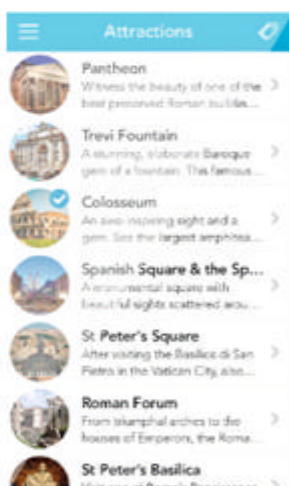
Stuff says ★★★★★
£free / Android, iOS



● Bonjournal

This one describes itself as a simple travel journal app. Install and sign up and you'll then be faced with a blank page, screaming MY FIRST JOURNAL. Don't worry, you don't have to write anything – just tap the 'people' icon, select 'featured' and do some touchscreen tourism vicariously through other people's tales.

Stuff says ★★★★★
£free / Android, iOS



● Tripomatic

In Tripomatic you select a destination, whereupon you're presented with lists of activities and attractions. For each, you get imagery and insights (although Android users are a bit short-changed on the former). You can also build an itinerary if, you know, you're actually thinking about leaving the house.

Stuff says ★★★★★
£free / Android, iOS, BlackBerry



● Storehouse

Storehouse is similar to Bonjournal, but it's not just about travel (although perhaps 'Building a Turducken' is a journey of a kind). Select 'Places to go' and you'll gain access to beautifully illustrated stories of exploration and adventure, full of gorgeous photography and video that goes full-screen with a tap.

Stuff says ★★★★★
£free / iOS



● Triposo

It's another app intended to build a travel itinerary, but Triposo's really cool feature is its city walks. Choose a location, whether that be Paris or Buenos Aires, decide on a distance and you'll be given a route and sights to see along the way, each of which can be explored further with a tap. Virtual walks for virtual tourists! Genius!

Stuff says ★★★★★
£free / Android, iOS

FULL OF COLOURS FULL OF SOUND

Libratone wireless speakers are probably the only speakers in the world with their own wardrobe. Changeable wool covers are available in 11 colours to match any style or decór.



LIBRATONE **ZIPP**

WIFI/BT Pepper Black or Salty Grey

£299.95 SRP

Portable speaker with
up to 8 hours battery

EXTRA ZIPP **COVER**

£39.95 SRP

LIBRATONE **LOOP**

WIFI/BT Pepper Black

£349.95 SRP

Flexible sound system with
replaceable covers

EXTRA LOOP **COVER**

£49.95 SRP

LIBRATONE **DIVA**

Pepper Black

£649.95 SRP

All-in-one soundbar
and music system

EXTRA DIVA **COVER**

£69.95 SRP

COLOUR UP WITH A FREE COVER!

Buy a Libratone DIVA, ZIPP or LOOP and get a free extra wool cover from our vast colour range with online registration. Go to libratone.com and see our full range of colours.

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360 Scandinavian™



The case for Serial

*(and the podcast
renaissance)*

Illustrations Bentheillustrator.com
Words Tom Wiggins

Podcasts have been quietly growing for years, but one show has turned them into a true cultural phenomenon. Stuff investigates the huge success of Serial



f 2011 belonged to Ned Stark in *Game Of Thrones*, 2012 was all about Lena Dunham's quartet of *Girls*, and 2013 was dominated by *Breaking Bad*'s meth-cooker extraordinaire Walter White, 2014 was the year of Hae Min Lee, Adnan Syed and Sarah Koenig. That's because the year's must-watch TV show wasn't on Sky Atlantic, HBO or Channel 4. It wasn't even a TV show — it was a 12-part podcast called *Serial*.

Serial is a re-investigation of a real-life murder case that unfolded in Baltimore, Maryland in 1999. Hae Min Lee, a 19-year-old student, went missing on 13 January and was found dead

nearly a month later. Her ex-boyfriend Adnan Syed was convicted of murder and remains in prison to this day.

But did he do it? That's the question host Sarah Koenig tries to answer, by re-examining evidence (or lack thereof), interviewing Adnan regularly on the phone, speaking to his classmates and family, talking to Hae's friends (her family never respond to Koenig), and even retracing the steps of the accused to check that the prosecution's timeline checks out.

It's a project that's inspired feverish devotion among its listeners — a two-million-strong jury for each episode, all desperate to discover the truth — and has signalled an exciting new dawn for podcasts. *Serial* reached five million downloads faster than any podcast in history, and had hit 20 million total downloads before the final episode had even been uploaded. There are pages and pages of Reddit threads dissecting the case and offering new theories; people had listening parties for the finale; *Saturday Night Live* parodied it; and there are even other podcasts devoted to *Serial* punditry. So what is it exactly that's caught the imagination of so many?

The podcast grows up

"It feels like someone's suddenly said: 'Right, let's do an HBO on podcasts'," says Scroobius Pip, rapper, spoken word artist and host of the *Distraction Pieces Podcast*, in which he's interviewed everyone from Russell Brand to Alan Moore. His show was, for one week, more popular than *Serial* on the iTunes chart. He even offers to send us a screengrab to prove it.

Tongue-in-cheek rivalry aside, Pip's right. *Serial*'s scope and production values are way beyond what most listeners are used to. It has both a bespoke soundtrack composed by Nick Thorburn and a synth-heavy incidental score by Mark Henry Phillips. Aren't podcasts supposed to be DIY affairs recorded in sheds and bedrooms with whatever makeshift kit the hosts can lay their hands on?

"I bought a recording kit that I can carry under my arm for about a grand," says Pip, "and I've gone to Russell Brand's house or Zane Lowe's or Simon Pegg's and we just talk for an hour. There isn't a theme. The interviews become more like chats — more relaxed, personal and intimate. You're not getting people in promo mode." *Serial*, on the

other hand, is one story told in episodic format week by week – although now it's over, latecomers can binge on it just like they would *House Of Cards*.

Koenig is a former reporter for the *New York Times* and *Baltimore Sun* so developing a story over time is nothing new to her, although perhaps none she worked on in print would have had a gestation as long as *Serial's*. Koenig began working on it back in 2013, with the first episode released on 3 October last year. At that point she didn't know how it would end. It was a textbook whodunnit for the Twitter generation, although posting any spoilers would get you hounded out of Tweet Town in far fewer than 140 characters.

While this serialised storytelling is, in Koenig's words, "as old as Dickens" – a reference to the way Charlie D used to write a chapter at a time and release them individually, making books more accessible to a less affluent audience – it felt entirely new for podcasts. *Serial's* parent podcast (and radio show) *This American Life* has been telling one-off stories since 2006 (or 1998 if you include its previous life on RealAudio and Audible.com), but nothing with this kind of long-form narrative arc.

Pip also has radio on his CV – but he isn't planning to do any more. "Last year

I stopped my radio show, which I'd won awards for and things like that, but it was just the thought that podcasts are going to take over.

Why would you tune into something when you can download it to your phone and not worry about losing signal when you go through tunnels on the train? I was a fan of podcasts anyway but I definitely think it's the future. It's a wonderful format."

Sounding the Bugle

And he's not alone. British stand-up comedian Andy Zaltzman parps on one half of *The Bugle*, a satirical podcast he began in 2007 after his co-host John Oliver moved to New York to work on *The Daily Show* (before landing his own show on HBO, *Last Week Tonight With John Oliver*). Originally funded by *The Times*, *The Bugle* was a way of carrying on the partnership the pair had formed on Radio 4 shows such as *Political Animal* and *The Department*. *The Bugle* has half a million listeners every month.

"It's a great medium because it's basically given anyone the opportunity to make something themselves," Zaltzman tells *Stuff*. "You can do it ▶

**It's easier to
make something
sound good than
look good**

Andy Zaltzman

2001

A brief history of podcasting

RSS feeds get audio

A new RSS feature lays podcasting's foundations by allowing audio files to be distributed automatically.

2001

Apple unveils the iPod

The company's portable jukebox puts audio in our pockets in a way not seen since the Walkman, paving the way for podcast listening.

2004

The word 'podcast' is coined

Combining the 'pod' from iPod and 'cast' from broadcasting, writer Ben Hammersley coins the term in *The Guardian*. It sticks.

2005

Apple adds podcasts to iTunes

Version 4.9 of iTunes allows users to subscribe to and download podcasts with a new section created for them in the Store.

2006

Ricky Gervais gets on board

Signs of mainstream adoption appear with *The Ricky Gervais Show*, which soon becomes the most successful podcast ever.

2014

Serial smashes records

Out of nowhere, *This American Life* offshoot *Serial* is released. With over 20m downloads, many call it the cultural event of 2014.



Best podcasting apps

Podkicker from £free / Android

The free version of this unfussy podcatcher does everything you need for free, but it's worth shelling out for the Pro version if you use it a lot as it removes the irritating ads and adds extra functionality.

Acast £free / Android, iOS

Acast takes a regular podcast and adds 'blings' on top. It's a horrible name for what are essentially links to extra material related to the subject being discussed. Scroobius Pip is already a big fan.

Soundcloud £free / Android, iOS

This is not strictly a podcatcher as it only allows you to stream; but if you'd rather not fill up your phone, the app is intuitive and there are plenty of podcasts available on it, including *The Bugle*.

Overcast from £free / iOS

Created by the geezer behind Instapaper, Overcast is another one worth paying more for. You can unlock tweaks to normalise voice volume and cut out silences to speed up listening.



on a very small budget – all you really need is a decent-quality microphone and a fairly basic sound editing programme – and if it's good, and people like it, then you can find an audience. You don't have to go through the laborious process of getting it commissioned, waiting for the little clouds of smoke to come out of the BBC chimneys or however it is they do it."

That kind of creative freedom is practically unheard of on radio or TV, so to get it on a platform with such world-straddling potential as iTunes is obviously an attractive proposition. "What you always want as a comedian is that total free rein, which is much harder to get in radio or television," says Zaltzman. "You have it in stand-up and you have it in podcasting – and it's far easier to make something sound good than look good."

Go it alone

It was also a big part of Scroobius Pip's decision to go it alone. "There's no longer any logic in having a boss," he says. "If you've got a boss then you've got to clear any guests or controversial topics. When it's just you and there's no other interference – yet you've still got

that huge platform that previously you'd need something like Radio 1 for – it's kind of crazy to have a boss. If you can hold it together and make it work, why would you be at someone else's will, when you can have that complete control?"

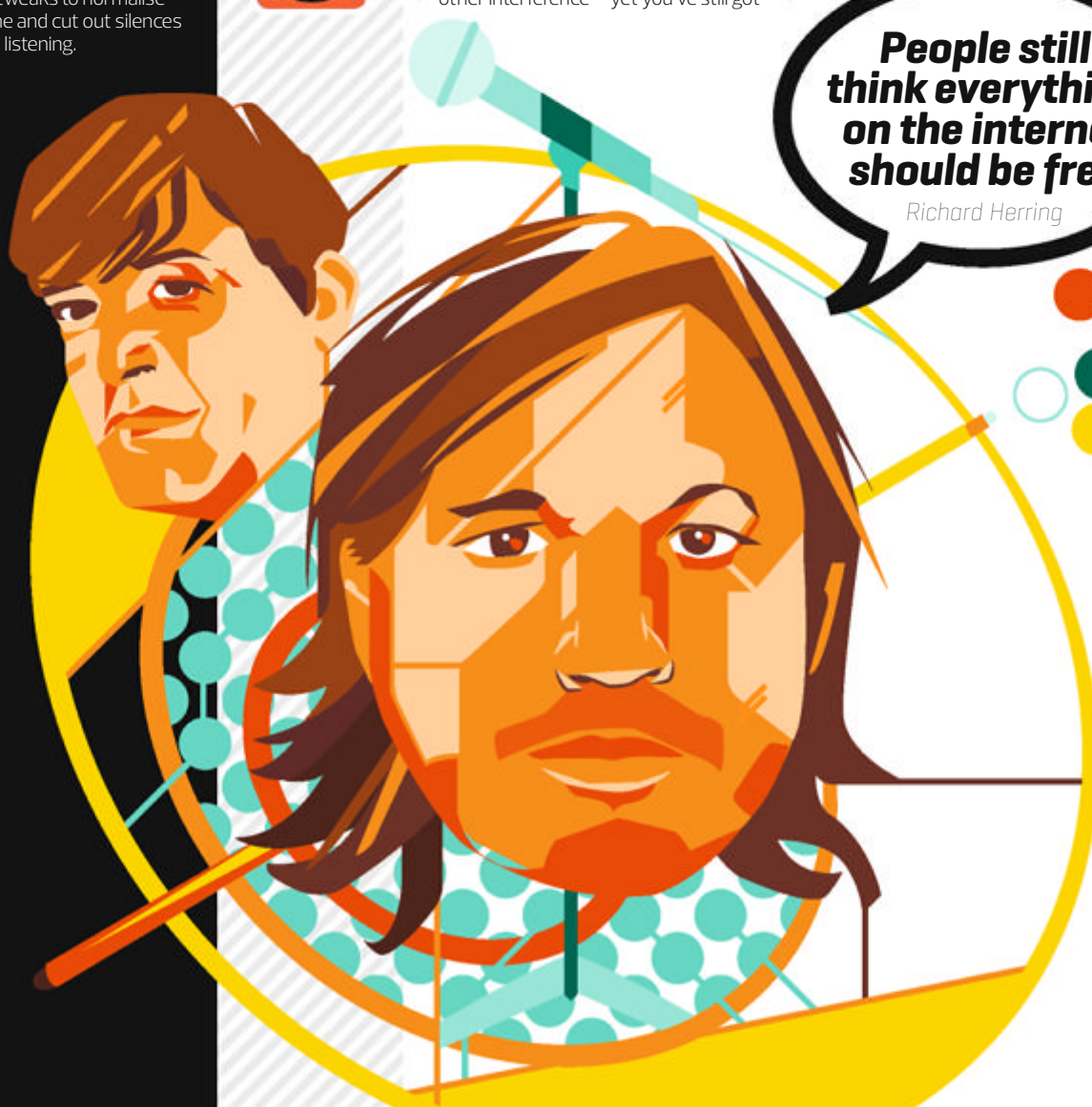
Of course, that's all very well if, like *Serial*, you've got the backing of a radio station (albeit one funded by listener donations) or newspaper, but what happens when the money runs out?

It was episode nine of *Serial* when Sarah Koenig first asked for money, a necessary evil she genuinely sounds uncomfortable doing. Since its beginning each episode had been bookended with adverts for MailChimp – an email service that became almost as much of a talking point as the case itself, thanks to the mispronunciation of the company's name by a member of the public in the opening ident. But evidently that, plus the support of WEBZ, wasn't enough. How do you fund a year's work when you're giving it away for free?

To keep *Distraction Pieces* going, Pip relies on advertising. With its one-man-and-his-microphone approach, he'd be

People still think everything on the internet should be free

Richard Herring



**There's no logic
in having a boss
when you can have
complete control**

Scroobius Pip

the first to admit that it's not exactly among the big-budget blockbusters of the podcast world, but nor does he feel its integrity is compromised: "Slaying over a song as an art and then getting into a recording studio feels different; I hope to get a direct payment for that. With the podcast I'd rather the payment comes from a corporation and people get to have it for free, rather than asking them to chip in. It's all a means to an end now."

Funding issues

While *Distraction Pieces* certainly doesn't shy away from controversial topics – he's already had revolutionary Russell and outspoken rapper Killer Mike on the show – for comedians such as Zaltzman and Richard Herring, advertising has been a minefield of potential compromise, particularly since cult stand-up hero Bill Hicks compared it to heavy petting with Beelzebub back in the '90s.

"I'm quite old-fashioned about adverts," admits Herring, who made his podcast debut in 2008 with *Collings And Herring* and has since released nine others, including *As It Occurs To Me*, *Warming Up* and *Richard Herring's Leicester Square Theatre Podcast*, the most popular episode of which has been downloaded 170,000

times. "If you know that I'll say 'I love Ian Harris's Crisps' even though I don't, but he's just given me £10,000, then what does that mean about everything else I say?" he explains.

Both *The Bugle* and Herring rely on donations from listeners and selling merchandise to keep their shows going. "People are still at the stage where they think everything on the internet should be free, so even if you charged 50p the downloads would probably be a tenth or even a hundredth of what they could be," says Herring. "I'm trying to encourage people to make donations of a pound a month, or whatever they can afford. That's building up a smallish fund of money that over time I can use to make other stuff. If everyone who listened to my podcast gave me a quid a year I could make my own sitcom, especially with the cost of producing stuff coming down. At the moment it's about 1% or 2%."

However, both Herring and Zaltzman do recognise the potential power of podcast advertising. "If you do build an audience it tends to be a very committed one, because people listen to podcasts in a very active way," explains Zaltzman. "They have to seek it out, download it and consciously listen to it rather than it being on the radio in the background, so with smaller listener numbers you

Stuff's top podcasts

Stuff You Should Know

No relation to this *Stuff* you're reading now, *Stuff You Should Know* is not a million miles away from QI. That is, a perfect source of pub chat (if you can get people to stop looking at their phones).

Retronauts

There's nothing gamers like more than a dose of nostalgia and *Retronauts* delivers in big, 16-bit spades. It's not all obvious choices either: there's plenty here for even the most hardcore button-basher.

This American Life

If you liked *Serial* it's worth climbing its family tree and delving into *This American Life*. The stories are over in an episode but they're often unexpectedly captivating. The Radio 4 of podcasting.

Guardian Football Weekly

Ever since James Richardson (aka AC Jimbo) hosted *Football Italia* in the '90s he's been a football fan's friend. Here he hosts the kind of intelligent footy chat you just don't get from Robbie Savage *et al*.



THIS
AMERICAN
LIFE



If you do build an audience it tends to be a very committed one

Andy Zaltzman

get a much more committed audience. If there was a podcast called *The World's Most Brilliant Screwdrivers*, a screwdriver company is far better off advertising there than just on the local radio station."

Podcast-only networks

Of course, these aren't the only options. YouTube has worked hard to monetise videos using those annoying pre-roll ads and splitting revenues with the uploaders, and there's no reason why audio-only sites such as Soundcloud couldn't do the same, or simply place relevant ads underneath the content.

Herring has accidentally created a successful business of his own, albeit one that's also supported by ticket sales for his live shows, a regular column for

Metro and the odd corporate gig, which he justifies by putting the fees towards creating more stuff to give away for free. How else would he be able to release recordings of him playing snooker against himself?

But there are also podcast-only networks springing up out there, such as Brooklyn-based Gimlet Media, which produces shows including *StartUp*, a documentary series about starting your own business, and *Reply All*, which tells stories about things that happen on the internet. There's also Radiotopia, which launched last year after raising over US\$600,000 from a Kickstarter campaign and now produces nine different podcast series.

There are also apps such as Acast, which lets podcasters embed links within the audio timeline to offer listeners more information on topics being discussed. Scroobius Pip already uses the app to add more content to *Distraction Pieces*: "It doesn't change the audio at all but if, say, I'm talking to Russell Brand about Athenian democracy, it'll come up with a link to the Wikipedia page for Athenian democracy. Obviously there's a financial side too. If we're talking about his book there'll be a link there to buy it. It just blows my mind that you can embed so much stuff, so in this hour of audio you're potentially getting three or four hours of reading material."

Casting into the future

While iTunes and Soundcloud are likely to remain the two main places for podcasts to call home, in the search to find a way to make a living from podcasting, other approaches may spring up. How about Bandcamp's direct-to-artist subscription model? While that's designed for musicians, the idea of picking an individual and subscribing to only their output, effectively giving them their own on-demand radio station, is one that could work for podcasts.

In fact, Herring has had a similar idea: "In 1910 Charlie Chaplin was part of a studio but then realised it would be easier to have his own. By charging everyone a tiny amount of money to come and see his films, he was a millionaire within two years. You basically become your own station and I think increasingly that will be the case."

Serial's pleas for donations worked. Through a combination of sponsorship and listeners' contributions, the makers have been able to announce that there will be a season two, although the subject is still unknown. What we do know is that, like a new series of *Mad Men* or *Game Of Thrones*, expectation will be sky high – higher than for any podcast ever before. And don't be surprised if others try to emulate its success. ●

6 tips for recording your own podcast

1

Pick your kit

The beauty of podcasting is that you only really need the essentials. A decent USB microphone, a pair of cans and a computer of some sort will do, but if you want to make things sound a little more professional you'll need an XLR mic, audio interface, mixer and some proper studio speakers.



2

Prep your 'studio'

Any hard surfaces in the room that you choose to record in will make sound bounce around all over the shop, so try to find somewhere with plenty of soft furnishings and a carpeted floor. Close the curtains. Ideally, record your podcast in a padded cell at your local asylum.



3

Select your software

Whatever you do, don't splash out loads of money on some fancy audio editing software. If you're using a Mac, Garageband is plenty good enough and has royalty-free music you can make use of too. If you're on Windows, Audacity is no-frills but easy to use.



4

Don't get too close

When you're actually 'on air', don't do a Liam Gallagher and try to eat the microphone like it's a delicious ice cream cone. Six inches away is normally about right. If you've got multiple voices but can only afford one mic, change its recording pattern to omnidirectional.



5

Make guests welcome

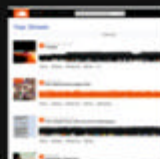
If you want to follow Scroobius Pip or Richard Herring's example and record some interviews but can't convince your interviewees to come to you, use Pamela (E27, pamelabiz) or Call Recorder (US\$30, ecamm.com) to record two-channel Skype calls.



6

Set it free

If you can't be bothered to mess about with an FTP, RSS, XML and other confusing three-letter abbreviations in order to get your podcast on iTunes, Soundcloud is a good alternative. A Pro Unlimited account costs £75 a year but allows you to upload as much as you want.

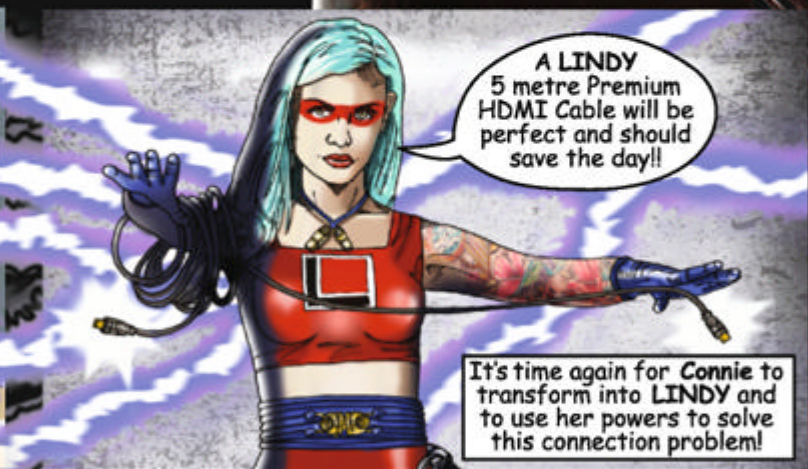
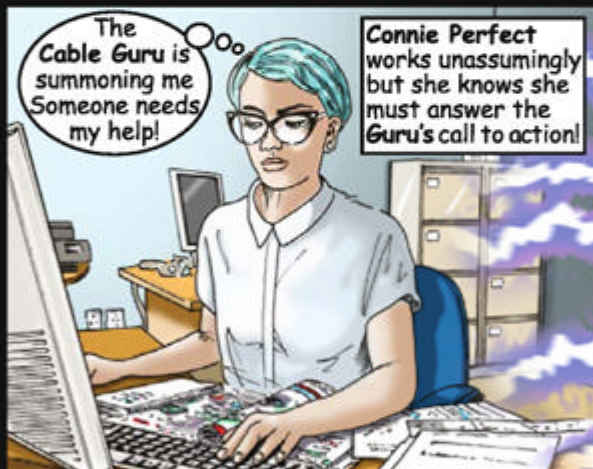
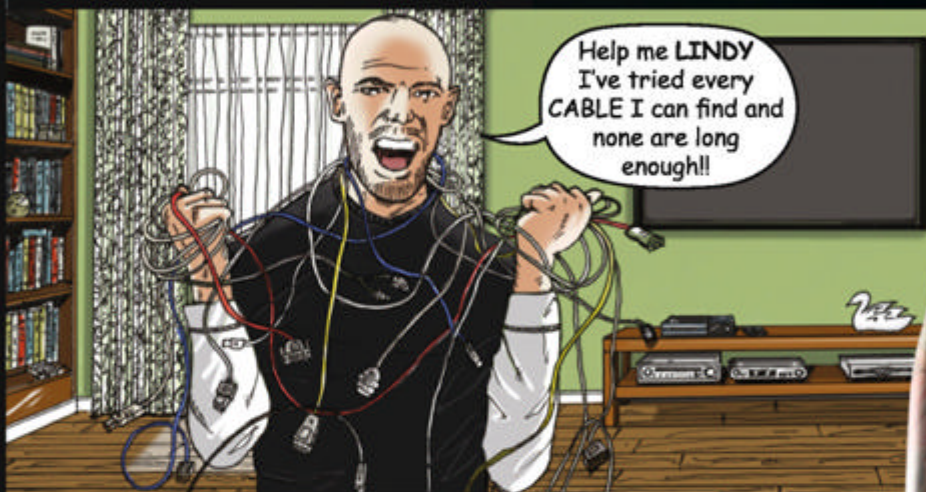


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Watch the thirdie

Sony's attempt no.3 at an Android Wear timepiece has wrapped itself around our wrists – but is it the best one yet?

■ Its design won't get your heart racing as the shiny circular body of the Moto 360 might, but the SmartWatch 3 isn't ugly – just plain and inoffensive. The adjustable strap is comfortable and the metal clasp is sturdy. Sadly, you can't use standard watch straps with it – you're stuck with Sony's.

■ The SmartWatch 3's biggest disappointment is its screen. While it's as sharp as its other Android Wear rivals, it can't hold a candle to the deep blacks of the LG G Watch R, and colours appear washed out, with yellowish whites.

■ There's no lack of power, though. The 1.2GHz quad-core processor runs the latest version of Android Wear without any lag or stutter. Speaking of which...

■ Android Wear 5.0.1 Lollipop brings a host of useful tweaks and features including funky third-party watch faces, and a Theatre Mode for killing off the screen in distracting situations.

■ With the screen set to Always On, the SmartWatch 3 matches the G Watch R's 1.5-day battery life, which is a decent innings for existing Google watches. Its microUSB charging port is a double-edged sword, however. Cables are fiddly and inelegant compared to a charging dock.

Tech specs

Screen 1.6in 320x320 TFT LCD
Processor 1.2GHz quad-core ARM A7
Connectivity Bluetooth 4.0, GPS, NFC
RAM 512MB **OS** Android Wear 5.0.1 **Battery** 420mAh **Storage** 4GB
Dimensions 36x10x51mm **Weight** 38g (Classic), 35.7g (Sport)
Price £170 / sony.co.uk



Run for your money

This is the first Android Wear device with built-in GPS, which means no more lugging your phone on runs to track your route. It works with major apps such as RunKeeper, with more support to follow.



Dust it off

The SmartWatch 3's rubber strap is a powerful dust magnet. Luckily it's IP68-rated against dust and water, so you can rinse it off under the tap without having to worry about its insides drowning.

STUFF SAYS The fittest Android Wear watch around. Shame about the display ★★★★★☆

The perfect fitness smartwatch?
Almost...

Esat Dedezade



While most people prefer the circular styling of its LG and Motorola rivals, fitness fans should be extremely tempted by the SmartWatch 3's built-in GPS. Going for a run, tracking your route and streaming music to Bluetooth headphones – all with your phablet left at home – is liberating. It's a shame there's no heart-rate sensor. For that your best bet is something like the TomTom Multi-Sport or Garmin Forerunner 920XT.

oppo

PM-2

Planar Magnetic Headphones

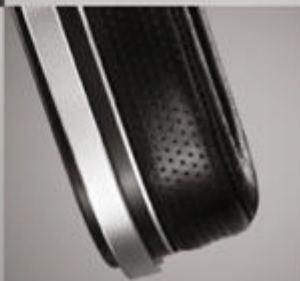
Featuring the same innovative Planar Magnetic driver as the multi-award-winning PM-1, the latest OPPO design reaches a more affordable price point



*“ the headphones
combine insight
and intimacy.
...a highly involving
listen. ”*



*“ The sound was
big, dramatic and
powerful, while
packed with masses
of fine detail... ”*



*“...by any
standards this is a
very special pair of
headphones. ”*



JANUARY 2015 | Hi-Fi News, UK



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5 OF THE BEST

Smart heating systems

The age of fiddling with manual timers and thermostats is over: we put five of the most intelligent home heating setups to the test

BEST FOR...
FAMILY
HOUSES

COMPLETE CONTROL

Honeywell's is the only system in our test that allows you to set different temperatures in different rooms; it uses its own Wi-Fi router.



Honeywell EvoHome £250 plus £70 per radiator plus installation / getconnected.honeywell.com

What's the story?

Honeywell's system is a lot like being God, but without all that business with beards and crosses. You can set schedules to control the precise temperature of each individual room of your home at every moment of the day and night, using either the tablet-like central controller or the free Total Connect Comfort phone app. You will need special Wi-Fi-connected valves fitted to each radiator you want to control – which soon adds up at £70 a pop – but you can always start with two or three in selected rooms then add more yourself later.

Is it any good?

The touchscreen controller is a doddle to use, and setting your schedules for the first time is a strangely empowering nerd project. Make the bathroom a couple of degrees warmer at morning shower time... make the kids' bedrooms a couple of degrees cooler when they're asleep but you're still up, thus saving them from sweaty head syndrome... create a weekend schedule with warmer living areas during the daytime, and then engage it on a weekday by selecting 'day off' mode. And of course you can save gas by putting the whole house into

chilly 'away' mode when you go on holiday, then override it from the airport so everything's back to normal by the time you get home. The valves even learn how long it takes your rooms to heat up and cool down, and will adjust their timings accordingly.

Honeywell reckons EvoHome can knock anything up to 40% off your gas bill by not pumping heat into rooms that aren't being used (there's an urban myth that heating up a cold room uses more energy than keeping it warm all day, but that's cobblers). So, while it is expensive, this system might pay for itself quicker than you think.



Totally rad

The smart radiator valves are small enough not to look clunky, and you're unlikely to be disturbed by the brief whirring noise they make when opening and closing. Each is powered by a pair of AA batteries which, Honeywell claims, should last two or three years depending on how fiddly you make your heating schedules.

STUFF SAYS A big old investment, but you'll soon pity anyone living without it ★★★★★

BEST FOR...
VALUE FOR
MONEY



APPY HEATING

The Netatmo apps are great, letting you do useful things such as whack the heating up for 90 mins with the minimum of fuss.

Netatmo €180 / netatmo.com

What is it?

The Netatmo by Starck Thermostat For Smartphone, to give it its grandiose full name, is a deceptively simple beast. On the surface, it's a minimalist perspex box plus a minimalist app, either of which can control your heating with a click. Delve a little deeper, though, and there are a wealth of customisation options plus some Skynet-level algorithms which, following a two-week learning period, should be able to predict your heating patterns and save you dosh. The physical thermostat can be customised in one of five colours and there are apps for iOS, Android, Windows Phone and web.

Is it any good?

Our dating days are long behind us, but living with the Netatmo cast us back to that time when awkward early misunderstandings were followed by heart-thumping love that settled down into comfortable happiness. It's not the easiest product to install; though Netatmo compares it to changing a lightbulb, that doesn't generally involve opening your boiler and rewiring mains cables. In the end it only took 20 minutes, but we wouldn't attempt it hungover.

Once the relay module is hooked up to the boiler, the thermostat links to it via RF

and you're away. Well, almost: the manual neglects to mention the need to connect the relay to your computer first so you can set up the Wi-Fi. That done, you really are away. At which point you fall in love. Looks-wise, the thermostat is a Ferrari in a street full of Fords, and the apps are similarly slick. You can set multiple heating periods per day, create profiles for different occasions – for instance term-time and holidays – and easily override the schedule: want an hour of 30° toastiness one morning? You got it. It's a joy to use and does a fine job of making the complex and boring look simple and sexy.



Algorithm is a dancer

The Netatmo's real talent lies in the algorithms that lurk within its electronic brain. The PID algorithm uses data such as how long it takes your house to heat up and what the weather is like outside to fire up the boiler before or after the set time as necessary. You can even link it with the Netatmo Weather Station for ultra-accurate weather info.

STUFF SAYS After the tricky first half-hour, it's an easy system to fall for ★★★★★

BEST FOR...
OLD
BOILERS



FROSTY RECEPTION

All the systems we tested will kick in if the indoor temperature drops below 5°C, which is handy because it stops your pipes freezing (and exploding).

Hive £200 or £150 for British Gas customers (includes installation) / britishgas.co.uk

What is it?

Hive plunges your boiler into the connected age, letting you control both your heating and hot water remotely. Your nan will be shocked, your friends will be impressed, and you'll all be nice and warm.

The British Gas system consists of a thermostat, a hub and a receiver – all controlled by an iOS and Android app, or via a browser. The thermostat lets you see and set temperatures and switch between manual and auto modes, and it talks directly to the hub, which is plugged into a router connecting it to the interwebs. The receiver lets the thermostat control the boiler directly.

Is it any good?

Installation is simple and quick – the British Gas installer should be in and out within an hour. Just make sure you've got a spare plug socket and free port on your router for the hub to plug into.

The app itself is very slick, and is more attractive than a central heating app has any right to be. Thankfully, it's easy to use too. Setting up schedules for both the heating and hot water is a breeze, and infinitely better than the archaic setup with (gasp) physical buttons and switches that we had previously.

You'll find that you hardly have to touch the thermostat thanks

to the app, but it's easy enough to use and lets you adjust the temperature or manually turn on the hot water or heating. It displays the current room temperature, and requires a button press to see the heating temperature. It would be nice if both were side by side, but that's just a minor niggle.

If anything, the main problem we've faced using Hive is the fact that everyone keeps adjusting the heating to suit their own preferences, opening up a can of Heating War worms. Luckily you can password-protect the app, making you the King of Room Temperature. Status at last...



Tanks very much

Hive is the only system on test with separate controls for hot water tanks. If your home has a 'combi' boiler that does both your heating and hot water you won't need this, but for larger houses with hot water tanks it can be very handy – you might set it to get the hot water stoked up before everyone has their morning shower, for example.

STUFF SAYS Great value – Hive's a winner for those with old-fashioned boilers ★★★★★

BEST FOR...
SMALL HOMES



WIRELESS FREEDOM

Unlike Nest, Tado's thermostat runs on batteries. This means you can place it on any wall you like, rather than being tied to mains sockets.

Tado from £200 / tado.com

What is it?

A location-based autopilot for your idiot boiler. Like Hive, Tado's apps (for iOS, Android and Windows Phone) use background geo-fencing to automatically lower or increase your home's temperature depending on whether you're off out or coming home. Going for a few unplanned post-work jars? Tado will keep the heating on simmer until it senses that you're on the bus home with your favourite kebab. The system claims it saves the average person 31% per year on heating bills and pays for itself in under a year.

Is it any good?

For certain types of people and households, yes. If you're a social butterfly or work irregular hours, Tado's location-aware heating is a real time- and money-saver. The most hands-off system around, its polished app is more of a dashboard than an attention-demanding remote control.

Though most self-install the system, there's also an option of a pro installation. If you don't already have a thermostat you need to buy the Extension box (£80). From there it's just a case of attaching the 'Bridge' to your router and choosing a spot for the thermostat.

It's possible to switch to full manual control of the heating, though this is a bit like buying a PS4 just for iPlayer. The system does not encourage manual tweaking, so if your home is witness to regular heating power struggles it might not be for you. But if you like the idea of a heating system that builds and adapts a model of the most efficient way to heat your home, Tado is recommended.

A couple of gripes: the box can lose its connection, sending the system into a dumber 'Fallback' mode. And there's no option of heating individual rooms yet (this is promised for next winter).



Comfort vs cash

Move its 'comfort level' bar towards the armchair symbol, and Tado will make sure your home is toasty by the time you step through the door. Go the other way, and it'll save money by only starting the heating when you get home. You can also select day and night temperatures, and have different preferences for weekdays and duvet-assisted weekends.

STUFF SAYS A polished system best suited to small homes and free spirits ★★★★★

**NEST EGG**

Npower is currently offering a 'free' Nest to anyone who switches to its Intelligent Control tariff – but check its prices against other suppliers.

Nest Learning Thermostat £250 (with installation) / nest.com

What is it?

Cast your mind back a decade and you may remember having an MP3 player – a clunky, slightly embarrassing device that could, with a bit of fiddling, play digital music. People would ask you what it was, and you'd explain that it was an MP3 player, and that it was the future. It wasn't: the iPod was the future, because it was simple and it looked cool. The man who made the iPod, Tony Fadell, has done the same thing to the thermostat. Nest has a major head start over the others in look and feel: its pleasingly hefty metal dial has an iPod-esque click, and there's a bright, vibrant display.

Is it any good?

When you get it working – professional installation takes around 20 minutes, and it's powered by a standard USB charger – the thermostat is easy to set up and control with a slick, well-designed app offering a digital version of the heating dial, a schedule and settings.

You don't really have to do anything with the Nest – once you've set your optimum temperature a few times, its algorithms quickly create a schedule based on when you get up, get home and go to bed – but it's more fun to have a tinker. We recommend making use of Nest's

IFTTT (If This Then That) channel. Because it offers map-based geo-fencing, you can have very fine control of when it starts warming the place up (when you're three bus stops from home, for example), and others can fire up the boiler with a text, email or tweet. There's even voice control via Google Now.

Once you've had your fill of playing around, though, it's Nest's sensors and algorithms that give it the edge. It settles into a pattern of getting the temperature right pretty much the whole time, and it's extremely adept at knowing when you're away (or in bed) and turning the heating off.

**Nest Protect**

The second product in the Nest line is a smart smoke alarm. It's pricey but the extra money buys you a few neat tricks. The Protect can trigger a call or email if there's an alert to tell you what's wrong – and because it can distinguish between steam, toast-smoke and a real fire, it won't go off as often as other smoke alarms.

from £90 / nest.com

STUFF SAYS The nicest design, paired with a ton of tricks and features ★★★★★

Better than 4K

The best TVs are all 4K, right? Not right. This LG's 55in OLED screen shows it's not about how many pixels you have...

£2000 / lg.com/uk

It's a period of uncertainty in TV land. Plasma screens have taken a bow and LCDs are all the rage, but more than one emerging technology is lining up to be the next big thing.

Pixel-packed 4K has been around, in the upper end of the price spectrum, for a while. But while there are some great 4K TVs (The *Stuff* Top 10-topping Samsung UE55HU7500, for example), they're still waiting for people to start making anything to watch in 4K.

OLED TVs have been around longer still, but while they were always full of potential, they were also hilariously expensive. So it's with great interest that we fired up the LG 55EC930V, a 1080p OLED wonderscreen that is – just about – affordable.

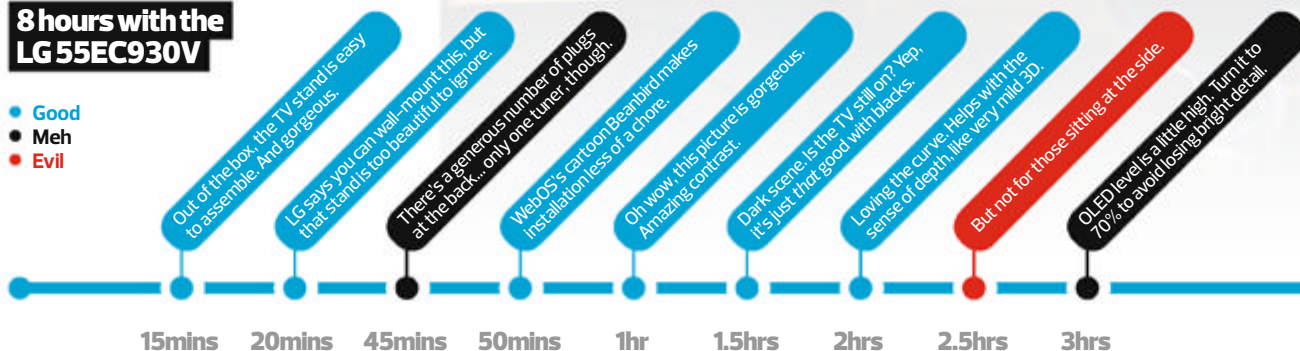
1 OLED but gold

OLED (organic light-emitting diode, fact fans) screens have self-illuminating pixels, which give them an edge. They don't need the superheated gases that a plasma screen uses, which contribute softness and picture noise. And because they emit their own light, there's no need for the thickness-adding, colour-adding backlight you find in LCD TVs.



8 hours with the LG 55EC930V

- Good
- Meh
- Evil



2

2 Why the curved face?

Curved screens are the flavour of the year, because they can offer better viewing angles — straight-on viewing is ideal, but anywhere within about 30° from the centre is fine — and can help reduce glare. They also look pretty and they're distinctive, which helps to quietly let people know you spent a ton of money on your TV.

3 Best. Screen. Ever.

It's a stunner. The levels of contrast and dynamism are a revelation. Blacks are so deep it sometimes looks as if the screen is off. That's skilfully juggled with dazzling whites and punchy, vibrant hues. Insight comes from the finely-drawn textures and edges. There's no light bleed. No, it's not 4K, but you won't be counting the pixels.

4 Pretty, shiny

If you can stop wondering at the picture quality, there's still plenty to admire. LG has done wonders on the design front. The screen is remarkably thin: most of it is no thicker than a pane of glass. Its simple elegance elevates the TV from a well-performing machine to a design choice.

5 Point and slick

LG's nifty WebOS interface arranges all your sources in one line of colourful tiles. Switching from web-based apps to local inputs is as easy as skipping channels. Main attractions include Netflix, Amazon Instant Video, Now TV, YouTube and BBC iPlayer. But no sign of 4oD or ITV Player.

Tech specs

Connections HDMI 1.4 x4, USB 2.0 x3, Composite, Component, SCART, digital optical output

Resolution 1920x1080 **Aspect ratio** 16:9

Screen size 55in **Dimensions** 715x1225x80mm (753x1225x204mm with stand)

Weight 14.4kg (22.4kg with stand)

4K or OLED?

The case for 4K

More is... well, more, and 4K delivers four times more pixels than 1080p Full HD. It's the next step of the journey we took from VHS to DVD and Blu-ray, and it brings more detail, sharper edges and more natural colours. You can also have a much bigger set without the pixels becoming obvious — 55in screens are now the bottom line. Netflix and Amazon Instant Video are the places to get your 4K fix right now, but there's still not that much to watch.



The case for OLED

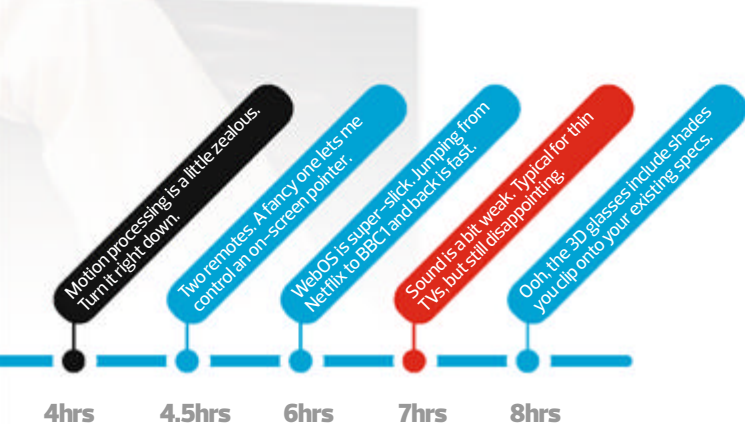
But what of quality over quantity? OLED might have far fewer pixels, but every pixel is made special from self-illuminating tech. OLED offers picture quality so high it's easy to forget about the numbers — and you don't need to press your nose to the screen to see the difference. Even if you bought a 4K TV it would be ages before you could feed it a 4K-heavy diet. Why not make those millions of hours of HD look better than they ever have before?



I love 4K, and in a perfect world a switch would be flicked and we'd all be watching everything with millions of pixels. But we don't live in that world and 4K is still more promise than reality. No TV out there makes the most of what I watch right now better than this LG. If TVs arrived that combined OLED and 4K, I'd be ecstatic. @CedYuen

STUFF SAYS ★★★★★

4K might be the future, but this LG OLED is the most amazing TV you can buy now



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CALL OF NATURE

These tech products take their inspiration from the natural world's finest work: designs perfected over millions of years of evolution

[Photography Pete Gardner]



NAKAMICHI DRAGON LILY

Take a moment to admire the sleek form of the Nakamichi Dragon Lily. Its metallic petals envelop a 2.1 digital integrated amplifier and speaker with Wi-Fi, Bluetooth and NFC capabilities. Enjoy its ability to control and charge iThings via USB. Then take a moment to think about its namesake, the dragon lily flower (also known as the 'stink lily') which, upon flowering, produces a smell almost identical to rotting meat, attracting the swarms of flies that help to pollinate it. And be thankful that Nakamichi haven't taken the biomimicry too far.

£240 / nakamichi.co.uk



AUDIOQUEST NIGHTHAWK

The Nighthawks may be named after a bird of prey, but their design draws inspiration from a much smaller flying animal. The 3D-printed grilles on these semi-open headphones take their cue from the structure responsible for iridescence in butterflies' wings. Produced by selective laser sintering (SLS), AudioQuest claims the intricate structure diffuses sound and thwarts distortion for a superior listening experience. Add earcups made of 'liquid wood' and cables built on AudioQuest's 30 years of experience and you've got something worth listening to.

Etba / audioquest.com



B&W T7

In nature, the honeycomb's job is to hold together nature's sweet bounty, collected by thousands of tireless worker bees all summer. In a Bluetooth speaker, that same honeycomb shape is at the heart of the micro matrix structure that braces the T7's cabinet to reduce unwanted vibrations. It'll make short work of hi-res audio with its aptX Bluetooth connection and DAC, and keep the party going all night with 18 hours' playback from its rechargeable lithium-ion battery and twin auxiliary bass radiators that promise enough boom to shake your room.

£300 / bowers-wilkins.co.uk



SUN WALL LAMP

Somehow, buying an alarm clock with a built-in wake-up light in an attempt to brighten your dreary winter mood isn't the same as getting an actual glimpse of our favourite giant ball of burning gas. If relocating to sunnier climes isn't on the cards, this wall lamp is about as close as you'll get, with its stylised circular shape that can be adjusted to a warmer or cooler colour temperature depending upon your level of pep that day. It's safer than inviting the real thing into your home, and more effective than staring into your desk lamp.

[Epoa / arnoutmeijer.nl](#)



SOLID GRAY BACKPACK

Often the job of a designer isn't to invent an entirely new thing, but instead to combine techniques and materials that improve the function of a product. That's why, when Solid Gray's designers were looking for a way to make a lightweight but strong backpack, they took their inspiration from nature, stealing ideas from shrimps and the armadillo's segmented armour. They then added a retracting handle, clever compartments for sunglasses and other nick-nacks, plus room for a 15in laptop and interchangeable straps within its 15-litre volume.

€170 / solid-gray.com

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Email: sales@devolo.co.uk

devolo
The Network Innovation



CLOUD

OK, so we're straying away from biology and towards geography here, but it's still Mother Nature's realm and we like the idea of having a cloud indoors. This one is made from felted hypoallergenic fiberfill for that authentic fluffy look, while on the inside is a Bluetooth speaker and light show controlled by an Arduino board. Unlike a real cloud, which rarely obeys commands, this one can be instructed via remote control, switching between lighting modes or responding angrily to its surroundings with a thunderstorm triggered by nearby movement.

US\$3360 / richardclarkson.com



BIOMIMETIC BUILDINGS AROUND THE WORLD

● Eden Project

The hexagonal domes of this giant greenhouse require no internal supports and draw on the strength of tessellated triangles, a strategy found in the human spine.

● The Gherkin

London's iconic tower circulates cooling air the same way a glass sponge circulates seawater, helping it to use around half the amount of energy of a conventional tower.

● Lotus Temple

One of the Bahá'í Houses of Worship, open to worshippers from all faiths, this temple in Delhi has a nine-sided circular structure and clearly takes its aesthetic from a lotus flower.

● Eastgate

This shopping centre in Zimbabwe uses internal structures inspired by towering termite mounds to aid cooling and ventilation, leading to a reduction in energy usage.

[Words: Joels Whitehorn Photos: know-uk, David Brazier, Aurelien Guichard, Vandelizer]



The Talos Principle

It's the end of the world as we know it, and I feel... metal? Wait, where am I? What am I? And just why am I firing lasers at doors to collect *Tetris* pieces?

There's not much mystery in games these days. Look at recent big hitters such as *Shadow Of Mordor* or *Far Cry 4* and you see a first half-hour of expositional cutscenes and a bombardment of instructional text that let you know almost exactly what's going on and how you interact with it. Which is fine, but leaves you little to ponder as you slash and shoot your way through the remaining hours of play.

But there are still some games that do things differently – games

that coax you in the right direction with intrigue and subtly designed gameplay mechanics – and *The Talos Principle* is the best example since the original *Portal*.

You're some kind of mechanised biped, that much you know. In the ruins of what seems to be an abandoned civilisation. And there's a godlike being calling you 'child' and urging you to complete puzzles to prove yourself so you can attain mortality.

You crack into these puzzles (well, why not?) and find that each

is a small maze containing doors that need to be unlocked by turning switches, or guiding lasers from source to receiver, and that each has at its heart a *Tetris*-like shape. Collect enough shapes and you can use them to complete a puzzle and unlock the door to a new area, or a tool that you need to complete future puzzles.

It sounds very simple, and in many ways it is, but the problems are so ingenious, the solutions so logical (even those that initially look impossible) and the learning

curve so perfectly judged that you'll be completely hooked in no time. There are no tricks here – it's just a case of thinking, unravelling the elements and utilising all the skills the game has already quietly taught you, and soon everything will come together in a moment of joyous satisfaction.

If *The Talos Principle* was nothing but the puzzles it would still be pretty great, but the philosophical story raises it up to brilliance.

Tom Parsons

STUFF SAYS Beautifully presented and genuinely thought-provoking – utterly brilliant ★★★★★



There are three 'gardens' full of puzzles. It's sort of like *The Crystal Maze*

Why doesn't Elohim want you going into that tower?



Just what the heck is going on?

There are a lot of questions to concern yourself with when you're not redirecting drones and jamming sentry turrets. Questions such as "Who am I?", "What am I?", "What happened to everyone else?", "Is this a dream?", "Who made me?" and "What should I have for breakfast?". OK, maybe not that last one.

The game encourages musings on consciousness and what makes us human, and there's a constant philosophical battle going on between faith and science, the former represented by the celestial voice of Elohim, the latter by the Milton Library Assistant – a sort of helpful AI stored on a network that you interact with via terminals dotted around.

You can also view emails and sections of philosophical texts that gradually give you hints as to what happened to the people who may or may not have created you and the place where you find yourself.

And then there's the tower, looming over the land but strictly off limits according to Elohim. But wait – it is possible to get in there. And Elohim loses sight of you when you do. What does that mean? And what happens if you unlock the higher floors? There's only one way to find out...

5 OF THE BEST

In-ear headphones

The world of 'phones can be a perilous place, especially at the budget, in-ear end of the market. There are countless options out there... which of them deserve a place in your lugholes?



Soundmagic E10S

SoundMagic's laurels appear to be in no danger of being sat on, as it continues to squeeze every last drop of magic out of the E10S.

The latest change is the inclusion of a one-button inline remote, and an unusual 3.5mm plug with a 'compatibility switch', which makes sure the remote's button works across phones of all flavours.

The sound is better than ever, with the latest tweaks resulting in a smoother delivery. Bass weight is well judged for punch and agility. There's also plenty of detail and a great sense of space.

Stuff says ★★★★★

At this price, these are phenomenally good
Price £40 / soundmagic.com.cn/en

AKG K323XSi

These AKGs are amazingly small and won't stick out of your head even if you have very flat ears. Tiny doesn't mean lacking in substance, though. Build quality is good, the cable's strong and there's a three-button inline remote for Apple users.

Fitting is a little awkward: it's hard to grab them to wiggle them into position. But it's a dynamic sound, with plenty of punch and attack. There are bags of detail, good for articulating every scrape and hiss of that hi-hat. Very occasionally the sound is a little hard at the top end, but it's not enough to ruin the enjoyment.

Stuff says ★★★★★

Don't underestimate these tiny buds
Price £50 / uk.akg.com

Sennheiser CX 3.00

It's kind of a special occasion for Sennheiser. After a string of similar-looking products, we now have something radically different and Beats-like. There are red, white and black options, with the buds displaying just the tiniest bit of bling.

Angled tips replace the straight-body design, which makes the buds easier to fit. They're comfy enough for long-term use.

An excellent seal means good noise isolation. It's a smooth, full-bodied sound, with plenty of weight and punch to the bass. But that bass is also overpowering, with little in the way of refinement

Stuff says ★★★★★☆

A comfortable listen, but not one for subtlety
Price £45 / sennheiser.com

Maxell MXH-DBA700S

In contrast to the AKGs, these Maxells are rather long, with a trumpet shape that sticks out quite a bit. Build quality is a mixed bag. The buds themselves are housed in aluminium but the rest feels a bit plasticky, especially the one-button inline remote.

The buds boast a hybrid design, with balanced armatures and 8mm dynamic drivers to enhance bass and vocals. Bass is certainly deep: put on Leonard Cohen and you can almost feel the phlegm. It's not a delicate sound, though. Greater clarity and stronger dynamics would help.

Stuff says ★★★☆☆

Great if you like deep bass and not much else
Price £50 / uk.maxell.eu

Audio-Technica ATH-CHX5IS

Every now and then a design brings to mind no words but 'WTF'. For starters, these are huge by in-ear headphone standards. And they're difficult to fit, with a design that means they're intended to nestle in the bit outside the ear canal. The idea is to be less invasive, but this means no proper seal and that leads to all manner of issues. Isolation is poor. The sound is insubstantial and hollow. Dynamics are not worth mentioning.

Still, at least there's a one-button remote with a volume slider.

Stuff says ★★☆☆☆

Little in the way of style or substance – don't do it
Price £30 / audiotechnicashop.com



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Arcam's world-class reputation for state-of-the-art home cinema and high performance Hi-Fi systems has now been applied to a soundbar.

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Wearable tech takes the stage

Wearable gadgets might once have been clumsy, half-developed things, but they've come of age. This year's Consumer Electronics Show was awash with on-body tech, and we've attached hundreds of devices to ourselves (not all at once) to bring you our top 10...



WITHINGS ACTIVITÉ POP

There's only so much space on a wrist. By the time you've added a normal watch, some bling and a fitness band, you look like a Del-Boy wannabe selling knock-offs down the market. The Activité Pop is less Del-Boy and more The Man From Del Monte. It's a real watch, for a start — one that tells the actual time.

An auxiliary dial shows how close you are to daily goals that you set on the accompanying app (things like steps taken, calories burned and distance covered). It also monitors your sleep, and you can even take it swimming. It's simple and elegant and unobtrusive — no look-at-me LEDs to tell everyone that you're honestly definitely working out, like, ALL the time. And the battery lasts a whole eight months — almost as long as a 'real' watch.

withings.com



OPINION CÉDRIC HUTCHINGS CEO, WITHINGS

On *Stuff's* stage at CES, Cédric called the Activité the "first true wearable". He wasn't being pompous; it looks great, and you don't need to take it off every few days to charge. So while other gadgets are 'smarter', none are easier to wear. Style and practicality are just as important as functionality in the world of wearables.

The Pop swaps the original Activité's premium steel alloy, leather and toughened sapphire glass face for PVD-coated metal and silicone, but it still feels good and costs, at US\$150, a lot less.



▲ RAZER OSVR

OK, so some areas of wearable tech are still at the prototype stage, but that doesn't mean they're not worth getting excited about. In fact, since Oculus first unveiled its Rift developer kit, the gaming community has been squirming in its seat like a puppy full of energy drinks in fervent anticipation of the Age of Virtual Reality. Razer's OSVR is, like the Rift, a dev kit, and it's the good kind: the 'OS' stands for Open Source, meaning people can build software and hardware for it using any operating system – yes, even Windows. You can get CAD files to 3D-print it, although the comparatively bargainous £130 price tag means that probably won't be necessary. The unit we saw was paired up with a Leap Motion controller, so it can even recognise hand gestures.

razerzone.com



■ ■ ■ HANDS ON TEIN HEE SEOW STUFF SINGAPORE

Razer's headset fitted snugly, and while it was still wired to a laptop, there were no physical controls attached. During the demo, I used gestures to sling fireballs while frantically turning my head in search of the ghostly targets. It's early days, so the controls were a little buggy, but it's moving in the right direction.

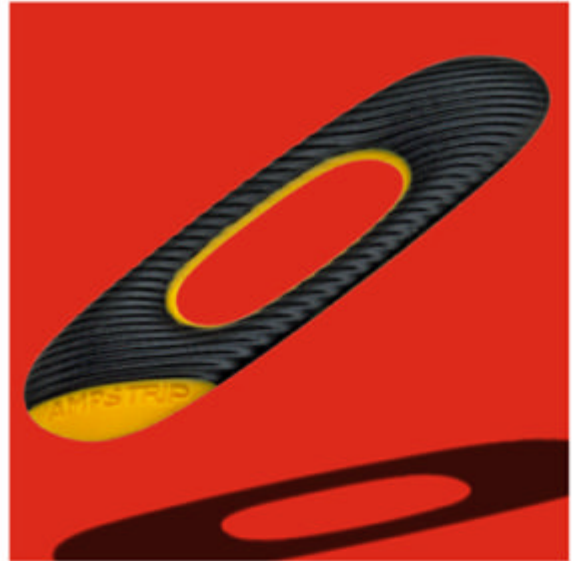
The OSVR's goggles house a 5.5in, 1080p display that can be replaced with a phone, so you can use it to build PC games, Android apps or anything else you think might work for virtual reality.



AMPSTRIP

Think fitness wearable, and your first thought will almost certainly be 'watch'. But watches are so passé. What you really want is an invisible, strapless tracker that monitors your every move 24/7. One day, embeddable trackers will do all this for us, but until then there's this. AmpStrip is a plaster, basically, worn on the left side of your chest where your heartbeat's strongest. And it only needs removing once a week for a wireless charge of the batteries and change of adhesive strip. The rest of the time you can swim, run and cycle, with the partner app letting you know exactly how hard you're working. This is the future of fitness trackers, and it's available from June.

ampstrip.com



SENSORIA FITNESS SOCKS

Socks? Really? Yes, really – because these aren't just any old foot-gloves. These socks contain dual sensors, one under the ball of your foot and another underneath the heel, that measure the impact of running on your feet before sending the data to the tracker attached to the sock.

Small increases in your step rate can reduce unnecessary pressure on your hip and knee joints, helping to reduce running-related ailments. Real-time audio feedback helps you keep to the desired number of steps per minute so that you can improve your run by subtly adjusting your gait. You can even view a heat-map of your feet in the accompanying app, seeing which areas you predominantly land on.

sensoriafitness.com



BELTY

If your competitive eating habit has meant you piled on the poundage over Christmas, this smart belt will be a godsend: it eases the pressure on your expanding waistline by loosening itself as you sit down, thanks to a small motor in the buckle. But it's not just about making life easy for you. The belt also packs an accelerometer and gyroscope, syncing with an app to track your movement. If you stay still for too long – or if the belt finds that your growing girth is cause for concern – it'll prompt you to get up and do some exercise. Yes, it's pretty silly and surely not as useful as the other fitness trackers here. But sometimes silly is OK, especially when it's as clever as Bilty.

emiota.com





GARMIN VIVOACTIVE

The Vivoactive is the Jessica Ennis of timepieces, combining a staggering array of sporting talents in a remarkably svelte form. There's daily activity tracking, deeper GPS-based analysis for triathletes, plus Bluetooth notifications from iOS or Android. Throw in Garmin's Connect IQ store and you have the makings of an Olympic champ.

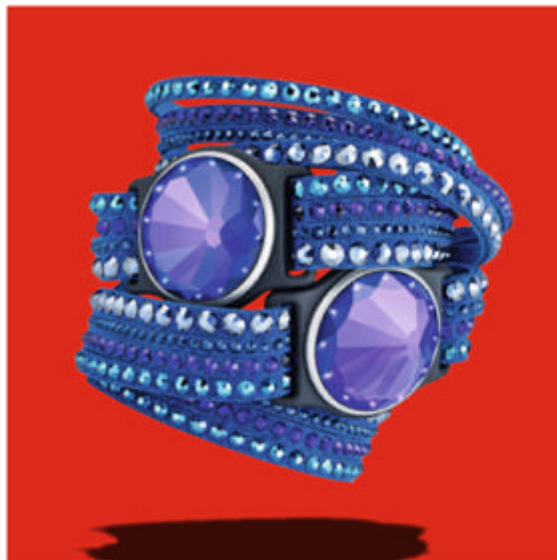
garmin.com



LOOKSEE

Like Heston's liquorice-poached salmon, the LookSee combines two unlikely bedfellows to brilliant effect. An E Ink smart bracelet with a one-year battery, it has hundreds of patterns to choose from, or you can make your own. With support for iOS notifications, it proves jewellery and wearable tech really can be a great combination.

lookseelabs.com



MISFIT SWAROVSKI SHINE

This bling-encrusted activity tracker solves one of the main problems of wearable tech: power. Craftily concealed solar cells turn light from the sun, LEDs and halogen lights into enough juice to power its fitness- and sleep-tracking talents. Sparkly wearables that don't need charging? Make us a Mr T version and we're in, fool.

misfit.com



SONY SMART B TRAINER

Sony's lughole-based personal trainer will give you ears of steel. The prototype running gadget uses GPS and a heart-rate monitor to track your progress, telling you when you need to speed up and switching your music to something more fast-paced by way of encouragement. Whether our legs will respond remains to be seen.

sonymobile.com



ALCATEL ONETOUCH WATCH

A smartwatch is one thing. A smartwatch that costs US\$149 is another. A smartwatch that works with iOS and Android is yet another. The Alcatel One Touch Watch is all of those. It runs on a proprietary OS that can play with phones from Apple and Google, and is appropriately nosy when it comes to your wellbeing, keeping several eyes on you with a heart-rate monitor, accelerometer, gyroscope, altimeter and compass, as well as sleep-tracking, steps, distance and calorie monitoring. It'll receive notifications and control your tunes, the battery lasts 2-5 days, and four finishes are available: dark red and black, white, chrome, and metal-white. If this budget wristputer delivers on its promises, it could be the one that brings smartwatches to the masses.

alcatelonetouch.com



The OneTouch's low price comes at, er, a price. It won't work with Google Now's voice commands and the extent of iOS notification support is still up in the air.



■■■
HANDS ON
JOHN STEWARD
STUFF CONTRIBUTOR

Rather than swiping straight at the OneTouch's screen to bring up its menus, you tap it at the bottom first. Tapping the right spot can be hit and miss, possibly because the watch is a touch smaller than Moto's 360. Still, that'll be welcome to those put off smartwatches thus far by the slight chunkiness of their bodies.

Roboxing clever

A 3D printer that's user-friendly and up and printing in under 10 minutes? The CEL Robox might just be taking 3D printers into the mainstream...

■ The CEL Robox looks a lot more polished than other 3D filament extruder-type 3D printers; it has an enclosure door, integrated filament spool and even curves!

■ Open up its AutoMaker software and you get a graphical representation. It's great for easing in first-timers, unlike the usual wall of input boxes. Click the light and it changes colours, click the extruder head and it moves.

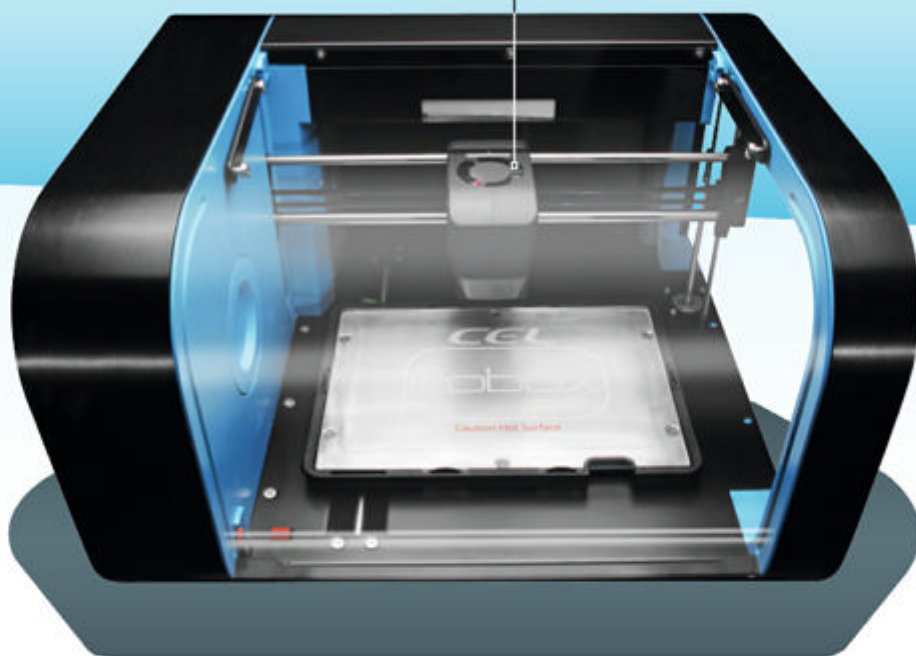
■ Importing STL part files and positioning them is simple. From there you can either jump right in with presets or expand the options to adjust the parameters yourself. It then sends it through the included Slic3r program and starts printing.

■ Treading the line between convenience and restrictive practice, the Robox's filament-laden SmartReels are recognised by the machine – but you can use third-party filament too.

■ The heated self-levelling print bed is a joy. ABS prints adhere well and the heat-retaining door helps avoid warping. The dual extruder, which alternates between fine detail with its 0.3mm nozzle and fast infill with the 0.8mm one, works well. And the needle-valve system prevents any oozing stringy bits.

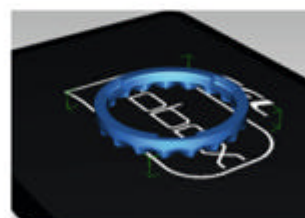
Tech specs

Build volume 210x150x100mm
Compatible materials ABS, PLA, PVA, nylon, HIPS, PC **Min layer height** 20 microns **Nozzle diameter** 0.3/0.8mm **Software** AutoMaker (PC/Mac/Linux)
Dimensions 370x340x 240mm
Price £1000 / cel-robox.com



On-screen dream

The ultra-user-friendly graphical dashboard lets you interact directly with parts of the machine rather than digging through menus just to nudge the extruder out of the way.



Model behaviour

Our best results turned out to be beautifully precise, with parts that could be clipped together straight after printing. However, we didn't see much of the speed advantage offered by the dual-nozzle system.

STUFF SAYS The Robox proves 3D printing doesn't have to be a dark art ★★★★★

Building the future with 3D printing... at last

Jools Whitehorn



3D printing has broken my heart before, but every time I hope it'll be different. And with the Robox, it feels like it is. 3D printing needs to offer a straight-out-of-the-box printing experience, and consistency rather than big promises and failed prints. There will always be issues related to unsuitable model files, and no relationship is without its hiccups, but thanks to the Robox I think I'm ready to trust a 3D printer again.

It takes two, baby - for true stereo 'wireless' sound.



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**BT3 is compatible with both Sky and Virgin remote controls.*



www.Qacoustics.co.uk

Media hoard

Take a substance-induced stroll on the beach with these two or sample some other new releases: a bunny-boiler, a Britpopper or even a bewildering beekeeper...

WATCH

Inherent Vice_cinema

Paul Thomas Anderson adapting Thomas Pynchon was always going to be unwatchable or unmissable. So which is *Inherent Vice*?

Joaquin Phoenix plays Larry 'Doc' Sportello – a beach-dwelling, pot-smoking private investigator with the hair of Wolverine and the wardrobe of Shaggy from *Scooby Doo*. When two people come to him for help – one an old flame, the other an ex-con – and mention the same name, he finds himself in the middle of a what is essentially an old-fashioned story of revenge, disappearances and deceit involving the FBI and mysterious organised crime. And it's played out through a haze of weed smoke hanging over California in the early '70s.

Anderson has picked Pynchon at his most playful. An early scene involving Doc, his attorney Sauncho Smilax (Benicio Del Toro) and Josh Brolin's show-stealing, frozen-banana-eating detective Bigfoot Bjornsen is just one of many laugh-out-loud moments that haven't had a place in his recent films.

After more than two hours, very few of *Inherent Vice*'s many threads are fully tied up (you should expect nothing less from a new PT Anderson film) but those that are satisfy in an unexpectedly heartwarming fashion. The others are lost in the woozy fug left by the trip. But then, that's kinda the point.

Tom Wiggins

STUFF SAYS ★★★★★



Selma_cinema

No, not a biopic of Marge Simpson's sister but the story of a landmark period for civil rights. Based on an Alabama march from Selma to Montgomery, led by Martin Luther King (played majestically by David Oyelowo) this is classic awards fodder, but its violence – police attacking unarmed black people – is a stark reminder that the fight continues today.

Tom Wiggins

STUFF SAYS ★★★★★



Gone Girl_Blu-ray

David Fincher binds Gillian Flynn's whodunnit into 149 minutes of sexual frenzy, media manipulation and more fake blood than a slasher flick, distracting from various loose ends. Rosamund Pike has us believe she is the ultimate femme fatale, while the plot twists at 1000 thriller-Watts per hour towards a culmination that brings a powerful wave of unease.

Natalya Paul

STUFF SAYS ★★★★★

LISTEN

MATADOR GAZ COOMBES

**Matador** _Gaz Coombes

Many might expect Gaz Coombes' own material to fall into the post-Britpop trap of standard jangly, singer-songwriter guff, but the former Supergrass frontman's second solo record shows he's capable of writing much more than just the cider-in-a-field anthems for which his old band became hugely popular. In any case, they were always much more than that and the swelling synths, fuzzed-up guitars

and laid-back piano on *Matador* coat the kind of effortlessly sophisticated melodies that filled the band's later records.

Less obtuse than a Thom Yorke album but no less ambitious, alongside the Super Furry Animals' Gruff Rhys, Coombes shows that Britpop wasn't the cultural wasteland many think it was.

Tom Wiggins

STUFF SAYS ★★★★★

**No Cities To Love**

_Sleater-Kinney

For their first record in 10 years, Sleater-Kinney aren't holding back. There's an urgency to *No Cities To Love* – words almost force their way out and guitars strain at the leash. The trio have channelled their decade of rage into 10 taut, angular punk rock songs that prove they've most definitely still got it.

Tom Wiggins

STUFF SAYS ★★★★★

**The Race For Space**

_Public Service Broadcasting

PSB combine trippy grooves and Mogwai swells with samples of spoken word recordings. It's a formula that can get a bit arse-toss, but the conceptual theme of their second album – built largely around the words of Apollo mission control staff – at least gives it an atmosphere all of its own.

Richard Purvis

STUFF SAYS ★★★★★

READ

TRIGGER WARNING

SHORT FICTIONS AND DISTURBANCES

**Trigger Warning** _Neil Gaiman

Sorry, comic-book fans: this is an anthology of *Sandman* author Gaiman's short stories. So there are no pictures at all, just words. Small black words, in a dreary font, on a plain white background. Where's the fun in that?

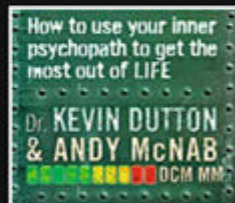
The fun, in fact, is just about everywhere. These are wildly diverse yet consistently engrossing tales with the odd mystical twist but no over-tidy endings: where lesser

writers struggle to tie up all their explanations in the short format, Gaiman is happy to leave questions floating in your brain.

Topics include imaginary girlfriends, Hebridean adventurers, murderous landladies and – in a story that somehow manages not to be preposterous – Sherlock Holmes keeping bees in China.

Richard Purvis

STUFF SAYS ★★★★★

**The Good Psychopath's Guide To Success**

_Dr Kevin Dutton & Andy McNab

McNab is a 'good' psycho, apparently – free of fear and empathy, but not the full Lecter. Dr Dutton says we can learn from him, but the swears, Danny-Dyer-does-science style grates, and a world with less empathy doesn't get *Stuff's* seal of approval.

Tom Wiggins

STUFF SAYS ★★☆☆☆

**Something Coming Through**

_Paul McAuley

McAuley's other books have been set on other worlds, 10 million years hence, but his new novel begins in a near-future London, where alien algorithms are infecting people's minds. Classic sci-crime elements, a whiff of cyberpunk and some clever ideas make this well worth a read.

Will Dunn

STUFF SAYS ★★★★★



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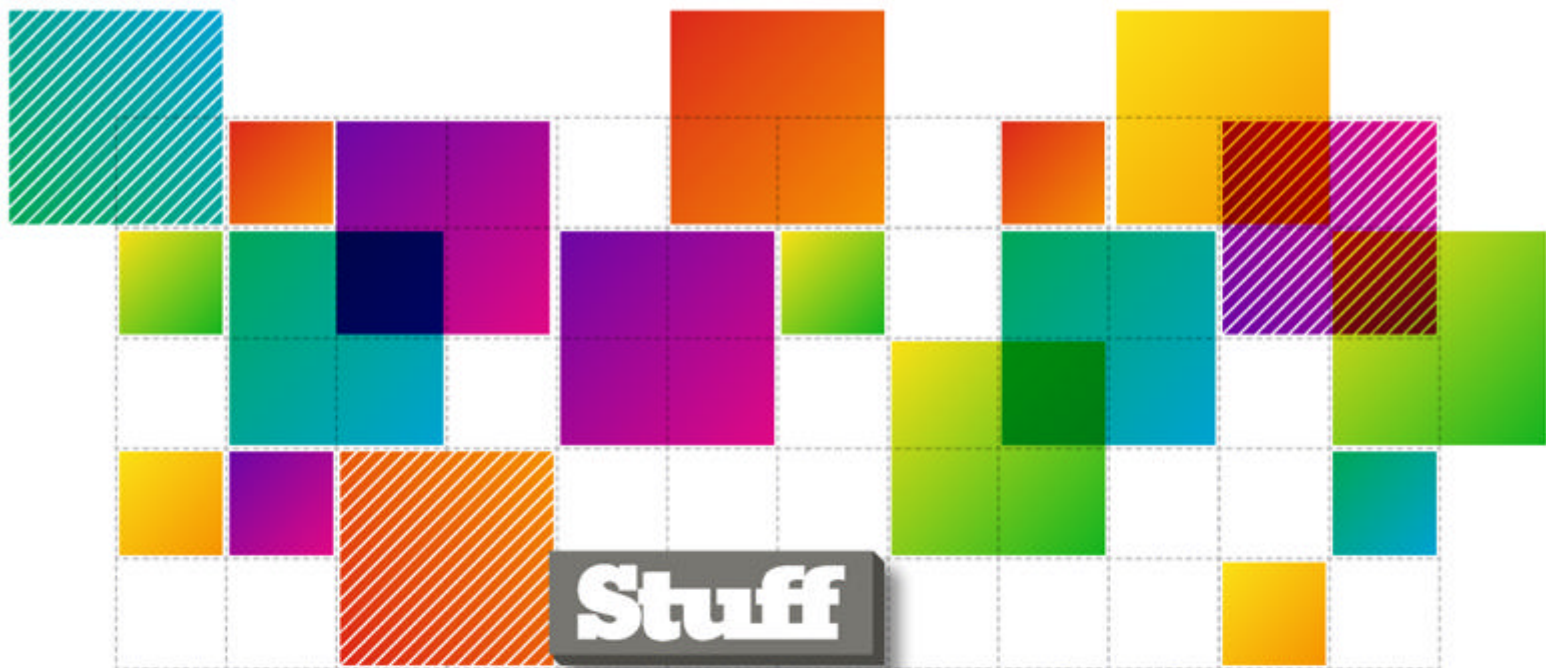
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PROJECTS

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p110
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ELECTRONIC
MUSIC

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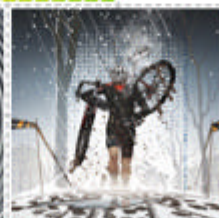
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TECHU-
MENTARIES

Watch away a few hours with top techy films



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SUPER GEEK:
MACRO
PHOTOGRAPHY

Tiny but still awesome: take a closer look



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INSTANT
UPGRADES
CYCLOCROSS

Carry your bike through mud... for fun

BETA
YOURSELF

ELECTRONIC MUSIC

Bored of stale guitar riffs and generic indie? DJ and *Mixmag* tech writer Gavin Herlihy reveals how to turn your laptop into your favourite musical instrument

THE BASICS

■ Choose your station.

A Digital Audio Workstation (DAW) is the production software you'll use to create your electronic music. Each one has different attributes so do some research. Garageband, Ableton Live and the newer Bitwig are the most beginner-friendly.

■ **Start with a beat.** The most common way to start a track is hammering out a beat with a Music Production Centre (MPC) or a drum machine like Maschine (native-instruments.com). The latter helps you build rhythm loops without a mouse slowing your flow.



■ **Borrow sounds.** Bringing in a new element from the outside world can open doors to your track's direction, so download lots of samples. Bear in mind that the better the audio source, the better your tracks will sound, so get digging through your vinyl collection rather than ripping MP3s from YouTube.

■ **Warm up.** Begin each session by jamming along to your favourite tracks. Playing along to the different elements will help warm your brain up to the task ahead.

■ Learn from the masters.

Compile a list of tracks you wish you had made. Work out what makes them tick so you can apply these features yourself.

■ **Be minimalist.** Most DAWs contain a mind-boggling array of applications and effects, so keep it simple to begin with: just pick a monophonic synth, a polyphonic synth, a beat-making plug-in and a sampler so you can learn them inside-out.



MASCHINE STUDIO



NEXT STEPS

■ **Avoid clutter.** Don't accumulate lots of plug-ins. They slow down your computer and your learning progress. Instead of flicking endlessly through presets, learn to create the sounds in your head by watching YouTube tutorials of your favourite plug-ins.

■ **Multi-task.** Rather than fighting it out for weeks trying to create one song, try working on two or three at once. Rotating through your projects will give you a sense of perspective for what's working and what's not.



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DUBSPOT
dubspot.com

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£4 per issue /
soundonsound.com

It might be a touch on the serious side, but this music tech mag (founded in the mid-'80s) remains the best destination for in-depth kit reviews. All articles are archived online, and the tablet version for iOS and Android lets you listen to 'before' and 'after' mixes to help hone your musical ear.



STUDIO BOOSTERS

■ **Get MIDI.** If you want to stick with software instruments, use a good MIDI controller to record automation changes. This will liven up your compositions.

■ **Go analogue.** Analogue synthesizers have a denser sound than digital, and jamming away on hardware often breaks up the monotony of staring at screens and clicking mice.

■ **Use a sequencer or arpeggiator.** These throw random MIDI patterns at your synths and help you play with your filters until something jumps out at you.



MIXING TRICKS

■ **Take the bus.** Mix bus channels help you tweak levels and add effects to groups of tracks, helping you mesh them together for your stereo master.

■ **Turn everything down to turn it up.** High frequency elements can often overpower a mix, so start low and turn them up carefully one at a time.

■ **Use channel EQ.** High-pass EQ settings shave the lower end off individual channels to create space in a mix. Aside from kick and bass, most instruments don't need those potentially muddying low frequencies.



FINISHING TOUCHES

■ **Take a break.** When you have a rough version finished, leave your track alone for a bit. When you return you'll know instantly if it's finished or not.

■ **Invest in good monitors.** Pull them away from the wall and use acoustic foam and bass traps to improve the acoustics.

■ **Become a master.** Final mastering is best left to the pros, but if you need a rough master, apply a multi-band compressor, a stereo widening tool and — last in the chain — a limiter to the master channel before bouncing.



PLAYLIST

TECHUMENTARIES

For a while, documentaries were seen as a bit stuffy, voyeuristic or condescending. But now we're falling back in love, with the help of our favourite streaming sites

Finding Vivian Maier

During her lifetime, Vivian Maier was an unremarkable nanny from New York. But in 2007 a photo collector bought a box of undeveloped negatives that would reveal her as one of the greatest street photographers of the 20th century. Uncover the mystery of Maier's Rolleiflex.

Amazon

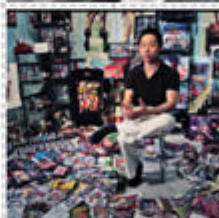


Terms and Conditions May Apply

Terms And Conditions May Apply

A pre-Snowden klaxon about our shrinking privacy, this dives into the small print of tech companies' user agreements to show how they're taking us on a fast track to Orwellian scrutiny. Echoes of *Minority Report* still put a chill down the spine.

Netflix



I Am Street Fighter

Made for *Street Fighter*'s 25th anniversary, this details the classic game's history via the mildly terrifying Evo Championships. There's a lot of hyperbole but, as one talking head puts it, the game is essentially "a really well made rock-scissors-paper".

YouTube



We Are Legion

This is a must-see for anyone with the slightest interest in modern history. Although ostensibly a film about the Anonymous movement, it touches on many elements of internet culture (memes, trolling, geek humour) and is entertaining, if a tad one-sided.

Netflix



An Alternative Reality: The Football Manager Documentary

Part love letter to the series, part advert for *Football Manager 2015*, this fans-only look at the world's most addictive spreadsheet has enough nerdy nostalgia to make any armchair tactician get playing.

iTunes, Blinkbox, Google Play



Indie Game: The Movie

Following the preparation of *Super Meat Boy*, this doc reveals that being your own boss isn't all it's cracked up to be, especially in the often solitary world of indie games. Even if the film's human subjects aren't always likeable, their games are the stars.

Netflix, Steam, Vimeo, iTunes



Objectified

Every object you see around you started life in someone's mind. Specifically the imaginations of Dieter Rams, Jony Ive and Marc Newson, who explain the philosophy behind 'mundane' manufactured products. Slick and serious: watch as a Gary Hustwit double bill with *Helvetica*.

Amazon





Tim's Vermeer

Tech pioneer Tim Jenison has zero experience with a brush, but by remaking the 'camera obscura' he believes was used by Vermeer he finds he can create masterful paintings. What follows is a fascinating study in single-minded dedication.

Amazon Prime
Instant Video



The Camera That Changed The World

Real life didn't exist until the portable film camera came in 1960, kicking open the doors of spontaneity and taking us from Mr Cholmondeley-Warner to *Don't Look Back* in one step. Predictably, the US networks hated this new unstaged reality and refused to broadcast any of it.



Print The Legend

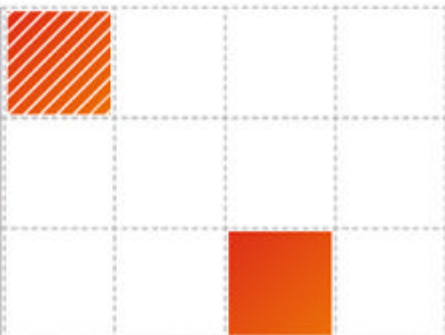
Not a fan of extruder nozzles or plastic ornaments? Don't worry, this doc ignores 3D printing's banalities and follows the journeys of Makerbot and Formlabs as they cope with the stresses of huge early growth. It's so entertaining you'll forgive it for avoiding certain questions.



The Internet's Own Boy

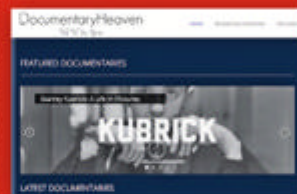
This is the story of programming prodigy Aaron Swartz, whose activism and subsequent arrest led to his suicide, aged 26, in 2013. The Reddit co-founder campaigned for greater access to public information. It's inspiring despite its disturbing view of the justice system.

YouTube



SCHOOL OF EASY DOCS

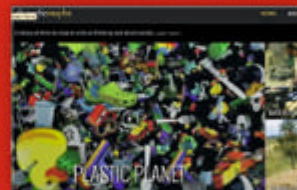
No more techumentaries left in the fridge? Time to raid these emergency stashes of free ones...



DOCUMENTARY HEAVEN

Rather than hosting films itself, this site collates all the free docs available on sites like YouTube and Vimeo and puts them all in one searchable, weekend-devouring place. Its handy 'Top 100' is the place to get started.

documentaryheaven.com



THOUGHT MAYBE

Adam Curtis fan? This independent archive hosts all of his compelling collage-docs, along with a huge library of films on 'challenging modern society, globalisation and dominant culture.' No, that doesn't include *Armageddon*.
thoughtmaybe.com



INTERNET ARCHIVE

If you really want to disappear down the rabbit-hole, check out this vast chamber of retro shows. Its 'computers and technology' section has almost 100,000 videos alone. Someone should make a film about it...

archive.org

SUPER
GEEK

MACRO PHOTOGRAPHY

Marc McLaren explains why there's beauty to be found in the smallest of details, from the complex exoskeleton of a grasshopper to the water droplets on a wing mirror

When I was eight I was given a microscope for Christmas – and so began a fascination with nature's hidden details.

I would examine leaves and bugs and bits of food, thrilling at the intricacy; but with only my memory to preserve the images, the details faded. It wasn't until I discovered macro photography 25 years later that I was able to record and share the beautiful world of the very small. And that's when I got really obsessed...

So what is macro photography? Well, officially, it means any shot

taken with a 1:1 magnification ratio – meaning your subject will be depicted on the camera's sensor at its actual size. But that's a pretty dry way of saying that it's the art of photographing the minuscule. And an art it very much is. While in some ways it's the most scientific of photographic pursuits, lacking the spontaneity of street shooting or the anthropocentric artistry of portraiture, if you can't see the beauty in nature, you're frankly a bit of a lost cause.

For me, macro's appeal is threefold. First, there's the

scientific buzz to be had from delving into a world that few people notice, and capturing, for instance, the crystalline structure of a snowflake. No, you're not making any real discoveries, and no, you're not even the first to take a photo of that kind. But doing it yourself is still a hell of a lot of fun.

Second, there's a serenity in the shooting process itself. You have to be calm, methodical and very patient with macro – it's all about getting your flashes and tripods and other gear just so, then tweaking your focus until

it's spot-on. It's the photographic equivalent of model building or tinkering with cars – and every bit as satisfying when it works.

But most importantly, macro can be breathtakingly beautiful. That shouldn't be a surprise – nature's been creating jaw-dropping art for far longer than humanity, painting pictures with symmetry and fractals and long strings of DNA. Macro merely magnifies this natural art so that human eyes can appreciate it. Don't believe me? Just grab a camera and start shooting. You'll soon find it.

TINY TIPS

■ STOP IT DOWN

Depth of field is minimal at the macro level, so unless you're going for an arty, abstract shot you'll need to select as narrow an aperture as possible. About $f/16$ usually does the trick.

■ KEEP STILL

You're often going to be shooting at slow shutter speeds in order to cope with the narrow aperture, so a tripod is nigh-on essential.

■ FLASH IT AROUND

The alternative to using a tripod is to use a flash. What you really want is a ring flash: these clip on to your lens to provide a soft, consistent light source. Pricey, though.

■ STACK IT UP

Focus stacking can work well: you shoot dozens of photos of the same subject from the same position but with a slightly different focal point each time. You then combine the images in processing software and end up with one super-sharp macro shot.

THE
GATEWAY
DRUG

OLLOCLIP MACRO 3-IN-1 LENS KIT

Stick an OlloClip on the back of a smartphone and you'll soon be hooked on macro. As the name suggests, this kit contains three lenses – 7x, 14x and 21x – plus a hood which helps the phone to grab focus. And the results are really quite good: the magnification is enough to get an instantly new perspective on the world, for instance highlighting the individual ink dots that make up coloured paper. The iPhone's sensor isn't big enough for super-sharp images once you zoom into your shot, but it's a cheap, easy way to dip your toes into the shallow macro waters.

£75 / amazon.co.uk

THE
AMATEUR'S
CHOICE

TAMRON SP F/2.8 90MM DI VC USD MACRO LENS

The easiest way to get consistently great macro shots is to buy a DSLR camera and a dedicated macro lens such as this Tamron. Its 90mm focal length will enable you to get a close shot while standing far enough back that you won't freak out your skittish subject matter, while the built-in stabilisation is a real boon if you're shooting handheld. There's a focus limiter to reduce the chance of the lens hunting around, though it snaps on pretty quickly anyway, and the big rubber grip is great for manual focus. Plus it's available in Canon, Nikon and Sony mounts.

£380 / parkcameras.com



THE
EXPERT'S
TOOL



CANON MP-E 65MM F2.8 1-5X MACRO LENS

While a lens such as the Tamron will take you to a 1:1 magnification ratio, the Canon MP-E takes things a step further – or rather five steps further, offering a massive 5:1 ratio. So while a standard lens might let you make out the compound eye of a bee, the MP-E will go in close enough that you can count how many facets each eye has. Not that we can think of any reason why you'd want to do that. The downside? It's a tricky, fiddly thing to get right: you'll need a tripod, a flash and lots of patience. But arm yourself with those tools and you'll have the keys to a new world.

£855 / jessops.com

BUDGET MACRO



FROM £4: REVERSE MOUNTING RINGS

These adaptors let you mount a lens on a DSLR camera backwards. The lens now acts as a magnifier in the way that a macro lens does, and the wider the lens, the greater the effect. Trust us, an 18mm lens reverse-mounted on a 200mm makes for crazy magnification. The downsides: no autofocus or aperture control, and your lens is open to the elements.



FROM £10: MACRO CLOSE-UP FILTERS

These work in the same way as UV or polarising filters, screwing on to the front of your lens and helping it to focus more closely; stack several together to increase the effect. Use them on a telephoto lens and you'll reach that magic 1:1 ratio. You retain exposure and focusing control, but images are often softer than they would be with a macro lens.



FROM £20: MACRO EXTENSION TUBES

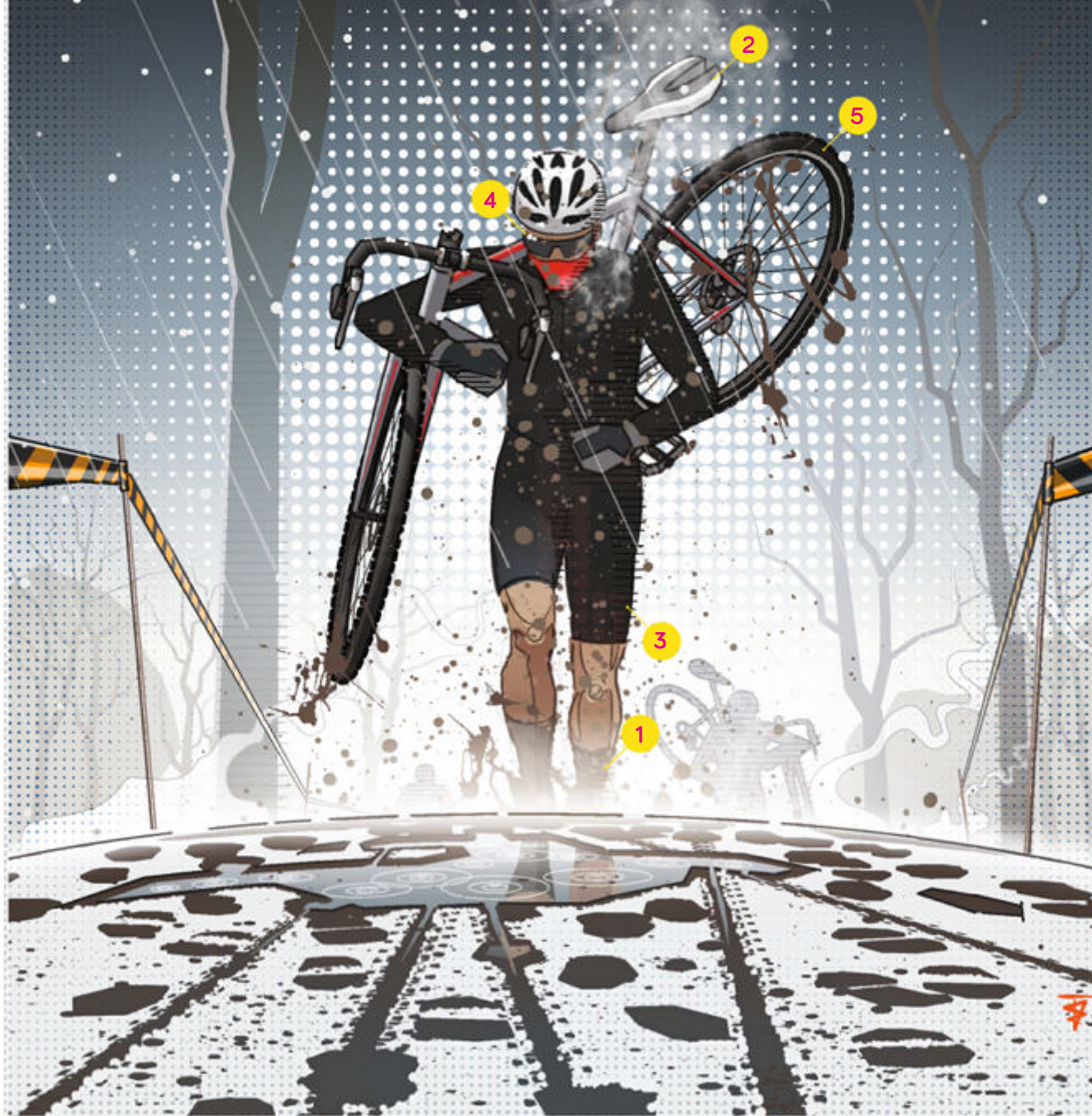
These hollow tubes sit between the camera and the lens and make the lens behave like a macro. The advantage is that you shouldn't see any loss in image quality. However, they reduce the lenses' effective aperture by a few stops, which will increase the amount of light you need, and while connected you won't be able to focus on distant objects.

[Pictures: RGB Digital, flickr.com/JoshuaMayer, flickr.com/GemmaStiles, flickr.com/arnia_a, flickr.com/ektogamat, flickr.com/marc_strummer]

6 INSTANT UPGRADES

CYCLOCROSS

Dip your muddy toes into cycling's favourite winter sport. Cyclocross is fast-paced short-course racing... and it's even more fun with this kit in your armoury



[Illustration: Jamie Smeddon]



1 SEALSKINZ MID LENGTH SEA EAGLE

Being dry is as much about improving your performance as it is about comfort. Sealskinz socks have top-secret patented technology, which give them great breathability while being completely waterproof. The Sea Eagle has a tongue-in-cheek design that pokes fun at stuffy golfers, with a comfortable fit thanks to their elasticated ankle and insteps. Save money on expensive shoes and invest in socks, because trench foot isn't a great post-race hangover. **£32 / sealskinz.com**



2 BOARDMAN CX TEAM

The CX bikes are the love-child of road and off-road, although cyclocross racing was around long before mountain biking. A couple of years ago the UCI relaxed the rules and cable-activated disc brakes began to appear. The purists will moan about weight, but when racing in muddy conditions being able to stop is pretty handy. After all, these are little more than road bikes with fat tyres. The disc-equipped Boardman CX Team is stiff, light and responsive, and great for the first-time racer. **£900 / halfords.com**



3 ENDURA THERMOLITE WINTER BIBSHORTS

If tyres are important as contact points with the ground, the right shorts are equally important contacts with your bike. During a race you'll be on and off, riding and jumping obstacles, so a bibbed short will stay tight, won't chafe and will keep you warm. Endura uses 'flat lock' stitching to avoid uncomfortable rubbing and its gel insert with an antibacterial finish will ensure you won't be walking like John Wayne the morning after the race. **£70 / endurasport.com**



4 OAKLEY RADARLOCK

While chasing down that elusive leader of the pack, the last thing you need is a big dollop of mud in your eye. The Radarlocks have a hydrophobic treatment applied to their clear lenses so muddy water will run straight off, giving you a clear, unobstructed view of the backside of the rider you're chasing. The lenses also darken automatically in bright conditions, making them suitable for virtually any weather conditions. Think of them as a lighter alternative to mudguards for a sport where weight is everything. **£185 / oakley.com**



5 CONTINENTAL CYCLO-X KING

It's easy to forget that tyres are the only thing connecting you to terra firma. You need to make sure your tyres can clear mud, grip and roll well. The Cyclo-X King, as the name suggests, does all three. It has a wide tread pattern for better mud dispersal, while providing larger knobs (no sniggering) for less rolling resistance on harder ground and improved 'bite'. They meet UCI regulations for width too, to save you from any humiliating disqualification issues. **£24 / conti-online.com**



6 GARMIN EDGE SERIES 500

Your race will last just over an hour — and if you have time to look at a computer you're not working hard enough. But using a data logger to show how you performed, like just how badly you tailed off on the last lap, will give you valuable training feedback. The Garmin Edge 500 links to both heart-rate and cadence monitors to give you telematics worthy of an F1 team, while the handy 'Courses' mode lets you compare rides over the same route. **£130 / garmin.com**

CYCLOCROSS ESSENTIALS



PRACTISE DISMOUNTS

A cyclocross race can be won or lost on how good your dismounts and re-mounts are. It can be a little bit of a leap of faith at first, but practice unclipping, jumping off the bike, shouldering it and running for a bit and then jumping back on. This is how you get the 'feel' of the bike and it will pay off in a race situation.



STAY WARM

Embrocation will keep your muscles warm before the race. Cold causes cramp and the professionals swear by a combination of gels and gentle spinning on a turbo-trainer before the race. You'll have two-min and one-min warnings to get yourself prepped at the start line, so get your race head on early.



RESEARCH RACES

Cyclocross races can be found all over the country and there will be a series near you. It's quite late in the 2014/15 season now, but there are still races such as the Cotswolds' Valentine's Day treat Lovecrossed (lovecrossed.co.uk). To find out about other races and how to get involved in the sport, go to British Cycling: britishcycling.org.uk/cyclocross

G A D G E T

D O C T O R



ALWAYS ON CALL

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google.com/+stufftv stuff@haymarket.com



MAIL OF THE MONTH

Q HIT ME WITH YOUR RHYTHM STICK

Hi *Stuff*, bit of a weird one this, but is there anything techy and fun you can recommend to a drummer who's bored with using practice pads? Something portable would be great. Cheers!
Chris Scofield

A You're in luck, Mister Chris. While Korg's Cliphit (£95, gear4music.com) might look like a giant ostrich egg, it's actually a portable music-making machine that has the power to transform almost any object into part of a drumkit. Connect the clips to anything from a tub of butter to a teddy bear, and their vibrations

are transformed into cymbal and drum sounds. There's a kick pedal included and you can add a hi-hat pedal too, plus it features 11 virtual kits, including one particularly essential kit with dog, cat and clapping sounds. All that and it runs off batteries for ultimate portability. It should be just the thing to spice up your practice.

Speak your brains and you could win a 6-month **QOBUZ HI-FI SUBSCRIPTION** worth £120
This letter wins 6 months of unlimited streaming in lossless-quality FLAC from Qobuz, worth £20/month

qobuz

Q JUICING ON THE GO

Hi Doc, I'm looking for a portable charger to top up my ageing smartphone during the day when I'm out. I don't want a gigantic brick, just something that'll make sure it lasts until I get home. Got anything to prescribe?
Andy McNeil

A We sure do, Andy. The Monster Powercard (£35, currys.co.uk) will let you top up your iPhone or Android handset with its 1650mAh battery up to three times faster than other USB chargers. It hasn't got the

biggest capacity battery around, but its credit-card-ish size means that you can easily slip it into your pocket.

Q DRONING ON

I'm an amateur video maker looking to snap up a fancy drone for sweeping aerial shots. I don't mind forking out the cash as long as I'm getting something decent. What would you recommend?
Ollie Chacksfield

A The latest DJI Inspire 1 is easily the best choice. It's got a 360° rotating 4K camera

for starters, and its landing arms are able to lift out of the way during flight for a completely unobstructed view. You can even snap up a second controller for just controlling the camera while another person focuses on flying. £2750 (dji.com) will net you the drone and two controllers.

Q TELLY WARS

I've got a bit of a gaming problem. The PS4 is hooked up to the big telly downstairs, but I keep having to disconnect it and lug it upstairs every time the kids want to watch some animated nonsense or the other half needs her *Downton Abbey* fix. Any solutions that don't require buying a very long HDMI cable?
Gavin Pavely

A This one's nice and easy. Part with £80 for the Sony PlayStation TV (amazon.co.uk) and it'll let you stream and play games on another TV in your house over your home network, without the need to cart around the console itself. Just plug it into another TV and away you go. You can also play compatible PS Vita and PS One games on it.

**Q WATCH SHALL I DO?**

There are a few decent smartwatches out there now, but I'm not sure which one to get. I've got an Android phone and I want to use the watch to delete notifications. I want to use it for running too. Any ideas?
Sarah Windle

A Sarah, your best bet is the Sony SmartWatch 3 (£150, amazon.co.uk). It beams notifications to your wrist, along with the other clever tricks that come with Android Wear such as voice search. It's also the first Android Wear watch with in-built GPS. Coupled with its ability to store music, you can take some Bluetooth headphones on a run and track your route while your phone takes a nap. Read the full review on p74.





5-MINUTE HACKS

IF NOTHING ELSE, AT LEAST...

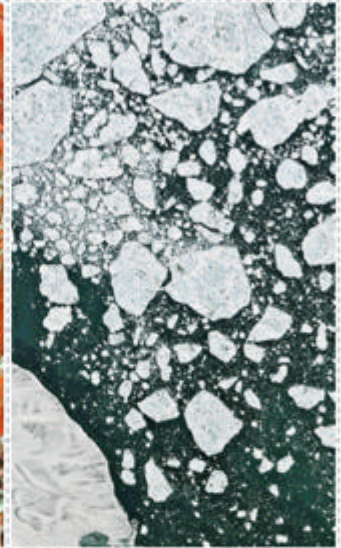
1 LIVE UP YOUR WALLPAPERS

Live wallpapers are nothing new, but what if you'd like to turn any GIF or cinemagraph into your smartphone's new homescreen background?

If you're an Android user, download AnimGif Live Wallpaper 2 (£1.70, play.google.com). Load your favourite GIFs onto your SD card, open them in the app's settings and select 'image fitting mode'.

Options for iPhones are a bit more limited. Though we don't recommend jail-breaking your device, GIFPaper (cydia.saurik.com) is for those who have already taken the leap.

Prefer your wallpapers to be stunning—but-static satellite imagery? aerialwallpapers.tumblr.com has a fine selection of resized snaps from the likes of NASA and Airbus.



[Pictures geo-airbusds.com, flickr.com/nasa2explore]

1

2 TURN A CHEAP LAMP INTO AN IPAD MOUNT

This simple lamp moonlights as an outstandingly lazy bedside accessory, with these simple tweaks from ikeahackers.net — see bit.ly/ikeaipadlamp

Gather the three things you'll need: Ikea's Tertial Work Lamp (£8.50, ikea.com), a mini camera tripod, and a tablet holder with a tripod mount.

Remove the lamp's head and the swivel head from your tripod. Now add a machine screw to the lamp's plastic collar (which previously held the pinion) and install the knob.

Insert the machine screw into the base of your tripod and tighten. Finally, attach your tablet holder to the tripod head, and recline as if you're in business class.



2



3 MASTER YOUR GMAIL

Pimp your overflowing inbox with these upgrades:

Need a backup of your Gmail?

Use Google Takeout (google.com/settings/takeout). Or to create a searchable local archive, download Postbox (postbox-inc.com) or Thunderbird (mozilla.org).

Just committed a 'reply all' danger?

It's too late, unless you've been into the 'Labs' section in Gmail's settings and enabled 'Undo Send'. It plucks recently sent emails and brings them safely home.

If you find yourself typing out the same messages in a kind of Gmail Groundhog Day, enable 'Canned Responses'. You'll now get the option to add tailored stock responses in the 'new message' window.

3



TUNE IN NEXT MONTH TO...

● Discover the best techsperience days ● Go on a voyage of microscopy ● Become a master of drones

WIN

**TOTAL
PRIZE
VALUE**
£599 x2



WIN ONE OF TWO **SAMSUNG NX30 SMART CAMERAS** INCLUDING **18-55MM LENS**

Whether you're planning a winter ski sojourn or a trip somewhere further afield, the NX30 is the ultimate compact system camera. Packed with premium features, the NX30 (RRP £599) lets you take superb-quality shots even in low light – so you won't end up with grainy photos if you're out with your camera on those dark winter nights.

And when pictures just aren't enough, you can record 1080p Full HD video with its hybrid autofocus. Then, when you're ready to show your handiwork to your friends, the NX30 lets you share all your memories in an instant with built-in Wi-Fi and NFC technology.

As you may have spotted by now, the reason we're telling you this is that we have TWO Samsung NX30s to give away to lucky *Stuff* readers – each complete with a Samsung 18–55mm lens. To be in with a chance, you just have to answer one question...

HOW TO ENTER

We have two of these £599 passports to photographic phenomenalness to give away. Just go to **stuff.tv/win** and answer the following question:

WHICH OF THESE IS A FEATURE OF THE SAMSUNG NX30?

- A** ... Hybrid autofocus
- B** ... Hydraulic suspension
- C** ... It automatically makes all your portraits look like Brian Blessed

Find out more at samsung.com

Terms & conditions **1** Open to UK residents aged 18 or over. **2** Entries close: 11.59pm on 11 March 2015. **3** Prize is as stated. **4** Prizes are non-transferable. **5** Only one entry per person. **6** For full Haymarket terms and conditions see: www.stuff.tv/legal
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HURRY!
COMPETITION
CLOSES
11 MARCH
2015













Stuff

TOP TEN

OF EVERYTHING

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& games machines	132
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& smart home	134

 For full reviews of every product in the top 10s, visit stuff.tv/reviews

HOT BUY 1	 Motorola Moto X After the Moto X, you won't want to go back to any other Android. It's smart, fast and beautifully crafted. Motorola's software works together seamlessly to make your life that bit easier and its brilliant Moto Maker means a personalised top-spec smartphone like never before. The Motorola feels like it's built for everyone, something made even sweeter by the price. It's no budget Moto G, but it is a reasonable £460 for the 32GB model. Who could say no to that?	STUFF SAYS The first truly gorgeous, seriously-specced Android phone that puts you in control – it's brilliant from £420 ★★★★★
2	 LG G3 LG surprises us again. There's barely a single thing wrong with the G3... and so, so much that's right. Upgrades range from sleeker back buttons to the bigger, better 2K screen and laser-assisted camera. And it still lasts 15 hours. How do they do it?	£340 ★★★★★
3	 Apple iPhone 6 With its slim, deeply attractive build and software overhaul, the iPhone 6 is the freshest-feeling iPhone in years. Its larger screen is big enough to be a useful improvement, with gorgeous colours, and this is Apple's best ever battery.	from £540 ★★★★★
4	 Sony Xperia Z3 Compact This is, without a shadow of a doubt, the best sub-5in Android phone around. The power of a full-size flagship, an excellent camera and an impressive battery life are all crammed into a device that's a pleasure to use no matter the size of your digits. Impressive stuff.	£360 ★★★★★ BEST FOR DAINTY HANDS
5	 HTC One M8 HTC's flagship phone has enough power to take it to the top of the AnTuTu benchmarks. It's a beaut to look at and to use, and it's even got a whole load of Lytro-style post-snap refocus features for photographic fun.	£470 ★★★★★ BEST FOR RAW POWER
6	 Samsung Galaxy Note 4 Samsung was first at the phablet game, and with the Note 4 it's still the best. The ace camera, Multi Window feature and pressure-sensitive S Pen make proper use of the extra screen real estate. Plus, it has the longest battery life of any 2K phone we've tested.	£585 ★★★★★
7	 Sony Xperia Z3 The refined Xperia Z3 is the phone the Z2 should have been and every bit as good as that sounds. It's sleeker and easier to hold, but with the same stunning screen, camera and hi-res audio. Not to mention the incredible battery life. PS4 Remote Play is due soon.	£465 ★★★★★
8	 OnePlus One Believe the hype. To get one of the best smartphones on the planet, you don't need £500 or £40 a month any more. You just need an invite. In terms of design, performance, screen and battery life you simply can't get better than this for anywhere near £300.	from £230 ★★★★★ BEST FOR VALUE FOR MONEY
9	 Samsung Galaxy S5 Big, bold and stuffed with tech, the Galaxy S5 is a bona fide superphone that will delight Samsung fans, although it has some very stiff competition. It has a faster processor, a slightly bigger screen and a more solid (if not quite stylish) feel than the S4.	£445 ★★★★★
10	 Motorola Moto G Google sprinkled some magical Nexus dust over this Motorola blower: the Moto G costs a mere £145 yet has a distinctly non-budget 4.5in 720p screen and quad-core processor. Paltry storage and poor camera count against it – but then again: £145!	from £145 ★★★★★

● Prices quoted are for handset only unless otherwise stated

FOR THE FULL REVIEWS AND OUR SMARTPHONE BUYING GUIDE, VISIT STUFF.TV/TOP-10S/SMARTPHONES

PLUG INTO STUFF'S
SOCIAL NETWORK



facebook.com/joinstuff



HOT BUY 1		Apple iPad Air 2 The iPad Air didn't really need to be thinner, but that doesn't mean 6.1mm isn't mighty impressive. This combines with reassuring weight and impeccable build quality to make this the most desirable tab on the planet. While the display is the same Retina resolution as before, clever screen tech brings the pixels closer to the surface, and the whole experience is even faster than before thanks to the new A8X chip. Basically it's the best tablet in the world made even better.	STUFF SAYS Thinner, lighter and mightier: Apple's iron-fisted reign at the top of the tablet charts continues unabated from £380 ★★★★★
2		Apple iPad Mini 2 With Retina Display The iPad Mini 3 is out now but all it adds is Touch ID. The good news is that the Mini 2 is now down to £240, which is frankly bargain-tastic. That's why the 'old' model stays in our Top 10 – if you're after a mini-tablet of real quality, your choice has just got easier.	from £240 ★★★★★
3		Samsung Galaxy Tab S 10.5 Samsung has blessed the Galaxy Tab with one of the best tablet screens we've ever laid eyes on, plus an impressive camera and some incredible stamina – but there are performance niggles and Apple's tablet app selection is still far superior.	£400 ★★★★★ BEST FOR MAGAZINES AND MOVIES
4		Tesco Hudl 2 At this price, the Hudl 2 has far more tech rammed into its 9.85mm-thick body than you'd ever expect. It has a Full HD screen, and its 273ppi display offers the sharpest of images. This is a jaw-dropping bargain, as long as you can put with the Tesco bloat.	£130 ★★★★★
5		Microsoft Surface Pro 3 At last, Microsoft has delivered on the promise of the tablet-cum-laptop hybrid. It proves there's space in the world for a design that's more productive than an iPad or Galaxy Note, but easier to hump around than a traditional laptop.	from £640 ★★★★★ BEST FOR WORKING ANYWHERE
6		Asus Transformer Book T100 A stonkingly affordable tabtop with raw power, a neat design and great battery life – perfect for Office on the go, thanks to Intel's new Baytrail CPU. The 1366x768 screen is a good 'un too, with crisp text, great contrast and colours that pop.	£300 ★★★★★
7		Google Nexus 9 The design isn't as pristine, but this is a real Android contender to rival the iPads. You get the new Android 5.0 Lollipop software, bags of power and a super-sharp display. With 12 hours of video play and two front-facing speakers, it'll be a great film buddy.	£320 ★★★★★
8		Sony Xperia Z3 Tablet Compact A slim, light and reliable couch or commute companion, with a screen that looks brilliant despite being 'only' Full HD. The waterproofing may sway people away from choosing an iPad Mini and every gamer's eyes will light up at the mention of PS4 Remote Play.	£320 ★★★★★☆
9		Samsung Galaxy Tab S 8.4 Samsung's superb screen, design, performance and a wider selection of optimised apps mean that against many other Android tabs it's still a winner. However, the new low price for the iPad Mini 2 makes the Galaxy Tab S 8.4 look rather pricey.	£260 ★★★★★☆
10		Nvidia Shield Tablet This really is the ultimate gaming tablet. The Shield's sheer power and gaming smarts are incredible, with a console-quality controller and the option of seamless streaming from your PC. All it needs now is more made-for-Shield games... lots more.	£240 ★★★★★☆ BEST FOR GAMING ON THE GO

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HOT BUY 1	 Sonos multiroom system Who needs to drill holes and re-plaster walls to get a multiroom music system? Not you. With the addition of the cracking little Play:1 (£170) Sonos has made it easier than ever to start spreading your tunes around. Then maybe hook up a Connect to your existing hi-fi and router, and add speakers to a Connect:Amp in another room, or a SUB for a bass boost. You'll run out of rooms before you run out of options. For a further upgrade, the Arcam rSeries SonLink DAC works a treat with the Connect.	STUFF SAYS Infinite music in every room without the need for custom installers? Sign us up now, please from £170 ★★★★★
2	 Naim Mu-so £895 for a wireless speaker?! Well yes, but what a wireless speaker it is. Naim has ploughed all of its high-end hi-fi experience into delivering a beautifully made, great-sounding device with AirPlay, Spotify Connect and aptX Bluetooth all on-board.	£895 ★★★★★ BEST FOR ONE-BOX WI-FI HI-FI
3	 Monitor Audio Airstream S200 It may look a bit like a floppy skyscraper, but the Monitor Audio's Bluetooth-plus-AirPlay speaker makes a lot of sense, mostly because it takes up very little shelf/desk/table space but makes loads of lovely noise. It's a bit of a steal at £200.	£200 ★★★★★
4	 Cambridge Audio Go There are loads of very cheap Bluetooth speakers out there, but we reckon it's worth spending that little bit more to get something that's really good – and that's the Go. It sounds awesome, it's really nicely built and its battery lasts a massive 18 hours.	£120 ★★★★★ BEST FOR PICNIC PARTIES
5	 Bluesound multiroom System Fancy a bit of Sonos-style multiroom but with better-than-CD-quality sound thrown in? You want a Bluesound. There are all-in-one speakers, adapters for your existing hi-fi, and a Vault that rips and stores all your CDs. All can handle high-resolution audio.	from £400 ★★★★★
6	 Audio Pro Addon T10 Available in orange, white or black, the Addon T10 is a Bluetooth speaker that also has analogue inputs and a USB socket for charging your MP3 player. Sound-wise it's punchy and deep, with just a little too much bass. It sounds best in orange, obviously.	£260 ★★★★★
7	 Libratone Zipp A fuzzy, cylindrical, colourful AirPlay dock that will deliver detailed, punchy 360° sound anywhere at all, thanks to a built-in battery that gives it four hours of outdoor life. Direct Wi-Fi skills free you from cables, routers and everything but the boogie.	£300 ★★★★★ BEST FOR AL FRESCO PARTIES
8	 Cambridge Audio Minx Xi It might not look all that fancy, but the Minx Xi is like that micro system you had at uni, only it gobbles internet music rather than Rage Against The Machine CDs. Just add a pair of quality speakers (try Wharfedale Diamond 220s) and you've got a great hi-fi.	£460 ★★★★★
9	 Q Acoustics BT3 These ultra-versatile Bluetooth speakers have an optical input for waking up the audio of your flatscreen TV. The styling is simple and so is the sound – brilliantly so, with perfect hi-fi balance and an impressive focus to the stereo image.	£290 ★★★★★
10	 Sony NWZ-ZX1 The latest Walkman is a premium high-res audio player, and it's the best-sounding portable device we've ever heard: you'll notice parts of songs you never knew were there. We're not so keen on the high price and lack of expandable storage, though.	£555 ★★★★★☆

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SONY

S90 SERIES • CURVED 4K UHD TV

The new S90 is Sony's first ever range of curved TVs. Available in two screen sizes: 65in and 75in, the S90 series boasts 4K Ultra HD resolution. Features and specifications include Sony's 4K X-Reality PRO picture engine, Triluminos colour technology, Motionflow XR800Hz, edge-lit LED backlighting, active 3D and a detachable Skype camera. Sound is provided by Sony's new 4.2-channel multi-angle live speaker system which allows for "expansive, uncompromised 360-degree surround sound". Other features include Sony's Social Viewing for watching with friends over Skype, Live Football Mode, One-touch mirroring and Photo share.

Prices from £3899

NAD M12 / M22

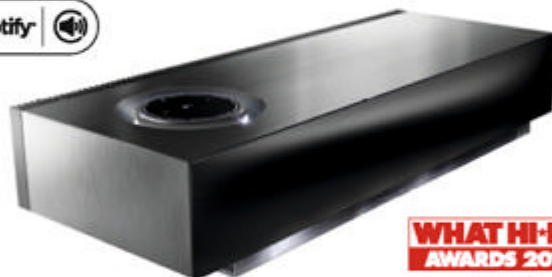
DIGITAL PREAMPLIFIER / DAC / POWER AMPLIFIER

The M12 is an ultra-high resolution digital audio hub that boasts a full roster of audiophile-grade features. An optional DD BluOS MDC Module allows streaming of a variety of music services, HD streaming from a NAS device plus it gives you full control of your music library. The M22 employs the latest generation of digital PowerDrive™ and offers a minimum of 250W per channel with amazing reserves of dynamic power at lower impedances.

£5998



NEW



WHAT HI-FI? AWARDS 2014

Wireless speakers
Best wireless speaker £500+
Naim Mu-so

NAIM MU-SO

WIRELESS MUSIC SYSTEM

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£895

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WHAT HI-FI? AWARDS 2014

Multi-room systems
Best multi-room system £300+
Bluesound

HOT BUY 1		AKG K451 They've actually been around a little while now, but what put the K451 on-ears back on to our radar was an official price drop from £130 to £80, and a real-world price of just £50 or less. For that money they're unbeatable – awesomely agile and punchy sound wrapped up in a subtly stylish and foldable design. Add both standard and three-button control cables for maximising compatibility and there's practically no excuse for not getting brilliant sound from your phone.	STUFF SAYS Fantastic sound and great portability at an almost unbeatable price: the perfect PMP upgrade £50 ★★★★★
2		Philips Fidelio M1 MkII Your commute deserves a quality soundtrack, and second-generation Fidelio M1 headphones give you precisely that. There's oodles of detail to the sound and they punch harder than the Hulk. Beats and their ilk can't touch them.	£155 ★★★★★
3		SoundMagic E10S This is actually the third version of SoundMagic's awesome, affordable in-ears – not that you'd tell by looking. They sound even better, though: a little smoother and more refined, with tight, weighty bass. Plus there's now a mic and button for smartphone use.	£40 ★★★★★
4		Sony MDR-EX650AP If you're prepared to pay a little extra for your in-ears, these Sonys are even better than the SoundMagics above. The sound is that bit bigger, a little more detailed and a little more grown-up, and if you don't like the brass finish there's a silver version.	£70 ★★★★★
5		Bose QuietComfort 25 The best kind of silence is the kind you then fill with sweet, sweet music, and that's what the QuietComfort 25s give you. The active noise-cancelling quells office hubbub, air-conditioning and aeroplane hum, and delivers cracking sound in its place.	£270 ★★★★★ BEST FOR SHUTTING OUT THE WORLD
6		Philips Fidelio M1BT There's a comprehensive set of controls, while the dark blue-grey design is nicely understated – no Bose-esque sticky-out Bluetooth modules here. Cut the cords with style and substance: these are the best Bluetooth headphones around.	£155 ★★★★★ BEST FOR GREAT SOUND WITH NO WIRES
7		AKG Y50 The bright colour options (they're available in yellow, teal and red, as well as black) and massive logo have a slight try-hard feel about them, but the Y50s make up for it by sounding loads better than the more 'street' on-ear headphones out there.	£50 ★★★★★
8		Sol Republic Master Tracks Really tough things are usually really ugly, which is why the lovely styling of the "virtually indestructible" Master Tracks headphones is so refreshing. Loud, punchy, fast and controlled, the sound is just as attractive as the design. Worth every penny.	£115 ★★★★★
9		Sennheiser Momentum Classily styled, cushion-comfortable and smooth-sounding, the Momentums are the perfect over-ears for the dapper man about town. There's also an on-ear version, smaller and cheaper at £130, available in pink, blue, green, brown and, um, 'ivory'.	£200 ★★★★★
10		PSB M4U2 Yes, the M4U2s have got great noise-cancelling, but that's only half the story. Using the built-in amp produces a sound that's almost unbelievably punchy, clean and exciting. They might be a bit heavy, but that audio quality really is worth the weight.	£250 ★★★★★

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*England's all time highest international wicket-taker, 343 test wickets correct at 23 May 2014. Source: www.jamesanderson613.com ** UK's No.1 men's supplement brand. (1)RI value data, 52 w/e 22nd Feb 2014.

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BUY

1

**Sky+HD**

The new Sky boxes come with built-in Wi-Fi, to make it easier to access on-demand programming, of which there's now more than ever, including pre-release blockbuster films. There's now a 2TB drive available that, with more than 65 channels of HD, might well be worth the outlay. On the move, the Sky Go app is supremely slick. But the most important thing is this: Sky has more movie, TV and sport content – and more of it is unique – than any other service.

STUFF SAYS

The only choice for serious TV, movie or sport addicts

from £free
+ £21.50/month

★★★★★

2

**Sony BDV-N5200**

A whole (home) cinema (minus a telly) in one box? That's the Sony BDV-N5200. A Netflix-toting Blu-ray player, an amplifier, five speakers and a subwoofer, all for a lot less than an iPhone 6. There's even a wireless adapter for the rear speakers.

£400

★★★★★

3

**Sonos Playbar**

A characteristically Sonos take on the soundbar, the Playbar hooks up to your TV via its single optical input and fills your room with a big, detailed sound. And as with all Sonos kit, it can stream your own music files, Spotify and more as part of a multiroom system.

£600

★★★★★

**BEST FOR
STREAMING
MUSIC**

4

**Sony BDP-S7200**

Sure, you can pick up a Blu-ray player for just £50 these days, but if you're serious about your movies then you want to make sure they look and sound crisper than a Kettle Chip. That's where the S7200 comes in. It even throws Netflix and iPlayer into the bargain.

£190

★★★★★

5

**Yamaha YSP-2500**

If your only requirement for a soundbar is that it should sound better than your telly, almost any will do; but if you want one that will fool your ears into thinking they're surrounded by actual speakers, you want the amazingly clever Yamaha YSP-2500.

£650

★★★★★

6

**Virgin TiVo**

Hardware-wise, the taste-learning TiVo is a Sky+HD-beater, but it loses out on content. Mind you, subscribers to the 'XL' package now have free access to all the BT Sport channels: Premier League football, MotoGP and more, in lovely HD.

from £free

+ £24/month

★★★★★

7

**BenQ W1400**

What's better than *Inception*? *Inception* on a 300in screen, that's what. How do you get a 300in screen in your house? You buy the BenQ W1400. If your lounge isn't quite that big it can also project an 84in image from just 2m away. Try finding an 84in TV for £900.

£900

★★★★★

8

**Panasonic DMP-BDT700**

The BDT700 is the Blu-ray player for the most serious of serious home cinema buffs. It's all high-end materials, sound-enhancing dampening and 4K-upscaling video circuits. But yeah, it'll also stream *Vampire Diaries* from Netflix if that's more your kind of thing.

£500

★★★★★

9

**Humax DTR-T1010 YouView**

Delivering free-to-air TV with the convenience of Sky or TiVo, the Humax lets you browse the last week's catch-up TV direct from the EPG or record your own on its HDD. The iOS/Android app's remote record is handy, and it's all without a costly subscription.

from £190
(500GB)

★★★★★

10

**Sony BDP-S5200**

There's no display, it looks a bit cheap and its remote is a bit naff, but this dinky Blu-ray player offers a lot of bang for very few bucks. For the money you get a very good picture, 3D (if you're still into that), Wi-Fi and plenty of on-demand apps. Bargain.

£80

★★★★★



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HOT BUY NEW 1	 LG 55EC930V Self-illuminating OLED (organic light-emitting diode) screens used to be full of potential but were criminally expensive. No longer. Behold this curved LG marvel which, for the most part, is no thicker than a pane of glass and verging on affordable. The levels of contrast and dynamism are a revelation. No, it's not 4K. But when 1080p Full HD looks this good, you won't be counting pixels – and it'll be some time before you'll be able to feed your TV a 4K-heavy diet anyway.	STUFF SAYS 4K and millions of pixels might be the future, but this LG OLED is the most amazing TV of right now £2000 ★★★★★
2	 Samsung UE55HU7500 Finally, a 4K TV that can be recommended without hesitation, plus it's just as good as a full HD TV when playing 1080p stuff. Chuck in all of Samsung's usual smart TV whizzbang, remove the silly motion-sensing controls and you've got a real star.	from £1600 ★★★★★
3	 Sony KDL-50W829B 4K a bit too new-fangled (or pricey) for you? How about a 50in edge-lit LED LCD with all of Sony's smart features for well under a grand? It's not even like picture quality's been sacrificed – this is an absolute corker of a telly in every way.	£730 ★★★★★ BEST FOR AFFORDABLE BRILLIANCE
4	 Samsung UE46F7000 The 46in F7000 might just be the sweetest spot in Samsung's current range – the same spectacular performance as the F8000 series but without the show-off design. Great picture quality and slick online functionality in one box.	£1400 ★★★★★
5	 Sony KD-65S9005B One of the best curved TVs we've tested is actually the least curved TV we've tested (not counting the actual flat ones, of course). How much difference the curve makes is hard to tell, but what we can say is this is an awesome-performing 65in 4K TV.	£3900 ★★★★★
6	 Sony KDL-32W706B There's nothing wrong with sticking with a smaller TV, but you should still make sure you pick a good 'un. This 32in Sony is the best, in terms of both picture performance and features, which include 1080p resolution and all the smart stuff you can handle.	£310 ★★★★★ BEST FOR A SMALLER SCREEN
7	 Sony KD-55X8505B If you want to jump on the 4K bandwagon with Sony you could go for the wedge-shaped X9, which is great, but we'd suggest that this slimmer, less intrusive 'entry-level' 55-incher is an even better buy. It's still got all the smart stuff and great performance.	£1300 ★★★★★
8	 LG 42LB700V The performance is very good, but what makes this 42in LG really special is its webOS user interface, which treats all sources, apps, recordings and live broadcasts equally, getting you to the content you want to watch quicker. And isn't that what a TV is for?	£500 ★★★★☆
9	 Panasonic TX-42AS500B It's not the prettiest, it's not the smartest, and with just two HDMI inputs it's not the most connected TV about, but there's a really simple, intuitive OS pulling the strings here – and a performance that's very strong given the price and 42in size.	£360 ★★★★☆
10	 LG 55UB950V LG's 4K flagship looks gorgeous with Netflix's 4K content... but as with the other LG telly at no.8, the real story here is the webOS interface. This 55in set is by far the most pleasant, colourful, multi-task-friendly and downright fun TV there's ever been.	£1600 ★★★★☆ BEST FOR MAKING TV FUN AGAIN

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HOT
BUY

1



Apple MacBook Air 13in

The 2014 MacBook Air update means, once again, our favourite old laptop is now our favourite new laptop. Nothing's changed on the outside, and under the skin there's just a slight processor boost from 1.3GHz to 1.4GHz, but combined with a price cut of £100 on each model we're still happy with that. The very top model, which comes with a 256GB SSD, is now just under a grand, too. Head to stuff.tv for our full reviews of both 13in and 11in versions.

STUFF SAYS

It's not a major upgrade, but Apple has improved the Air's already awesome spec and lopped £100 off the price

from £750 ★★★★★

2



Apple MacBook Pro with Retina Display 13in

Choosing between Air and Pro is getting harder. Both now run on Haswell chips, but the Pro is faster, with a 2014 processor boost. There's a 4K-capable Thunderbolt 2 port, and then that Retina screen, one of the most gorgeous you'll see. Tough call.

from
£1000
★★★★★

BEST FOR
EVERYTHING
BAR THE PRICE

3



Microsoft Surface Pro 3

The fact that it's the only device to feature in two of our Top Tens is a testament to the Surface Pro's versatility: it's a strong tablet, but its full-fat operating system and powerful innards mean it's also a worthy adversary to Ultrabooks and MacBooks.

from £850
(with Type Cover)
★★★★★

BEST FOR
WORKING
ANYWHERE

4



Dell Chromebook 11

Well-built, tough and powerful: Dell has delivered pretty much all you could want from a wallet-friendly Chromebook. Its high-quality finish, solid keyboard and responsive trackpad feel premium and it's a runaway success in our benchmarks.

£215
★★★★★

BEST FOR
VALUE FOR
MONEY

5



Alienware 17

A brute of a machine in every way, the Alienware 17 weighs as much as four MacBook Airs and probably frags harder than 10 of them. Core i7 Haswell processor at 3.4GHz, Nvidia GeForce graphics, up to 32GB of RAM... our trigger finger's already itching.

from
£1500
★★★★★

6



Lenovo Yoga Pro 3

The third entry in the Yoga Pro line refines the laptop/tablet hybrid design with a power-sipping new Intel Core M processor plus slimness and style to make even the MacBook Air look worried. And you can stand it up like a tent. If you want.

£1300
★★★★☆

7



Asus C200

The holy grail of laptop battery life is 10 hours, and Asus's C200 Chromebook misses it by 17 minutes. That's as good as we've seen from a MacBook Air costing four times as much. There are more powerful Chromebooks, but this one just keeps on going.

£200
★★★★☆

8



Acer Aspire S7

The Aspire S7 is almost the perfect Ultrabook – it matches the MacBook Air for weight, beats it for slimness by 6mm, and has a gorgeous 1920x1080 touch-friendly screen. Only its battery, which lasted a mere 5hrs on test, prevents it getting that fifth star.

£1000
★★★★☆

9



Toshiba CB30-102

Although this Chromebook only includes 2GB of memory, it wowed us with its incredible performance. It's able to juggle the web's most demanding sites without any lag or stuttering and its appealing larger screen makes it well suited for media.

£200
★★★★☆

10



Acer Aspire Switch 10

A Windows laptop and 10.1-inch tablet for just £300? This seriously flexible bundle is Asus's best hybrid yet. Only a bit heavier than a MacBook Air, the square-edged ergonomics and battery life are issues, but as a whole package it makes a lot of sense.

£300
★★★★☆

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THIS
MONTH
IN...
2010



Asus Eee Top ET2203T

£770
Stuff said This touchscreen PC looks like a giant iPod Touch with its smooth, seamless body and flush-fitting screen. It's not the fastest for the price but has some added extras that you won't find elsewhere, like a Blu-ray player and HDMI input for a games console.
★★★★☆



iRiver Story

£230
Stuff said This ain't no Kindle. The Story shares its aesthetic qualities, including wonderful build quality and a QWERTY keyboard, but lacks the Kindle's 3G connectivity. Easy on the eye and easy to use, the Story is a great bit of kit. But other e-readers are imminent.
★★★★★



Klipsch Image S4

£70
Stuff said Combining the bass of the feistiest buds around with the high-end resolution of the most refined, the S4s offer bundles of detail and insight but are as agile as a spring bunny. They just make you want to listen to music.
★★★★★



Revo Heritage

£230
Stuff said Revo's retro-tastic Heritage has a mono design but it brings plenty of goodies: there's an iPod dock, Wi-Fi streaming, internet radio, DAB and FM. The sound is energetic but never very involving, and navigation is a pig, but on its range of skills it can't be beat.
★★★★☆

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BY CAR: From the M4 take J19 (M32 - Bristol). Follow signs for City Centre and RAC signs to the Show. For those using satellite navigation systems the hotel post code is BS1 3AD. Easy local parking in Cabot Circus car park and Broadmead and Bond Street NCPs.



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WHAT HI-FI?



HOME COMPUTERS

HOT BUY	1		Apple iMac Other than regular power upgrades and a bit of slimming, the iMac has been largely unchanged for a while, but it does now run Apple's lovely Yosemite OS. There's also now a more affordable version and an eye-wateringly expensive 5K model.	from £1000 ★★★★★	BEST FOR ALL-ROUND BRILLIANCE
	2		Sapphire Edge VS8 This mini-PC may look like the Terminator's lunchbox, but it houses AMD's 1.6GHz A8 APU and dedicated HD7600G graphics with 4GB of RAM. A capable little fellow, the VS8 even does a decent job with the latest gaming titles (with the detail dialled back a little).	from £320 ★★★★★	BEST FOR COMPACT POWER
	3		Alienware X51 (2014) The X51 hasn't changed a huge amount, but the wee size matched with powerful components make it perfectly suited to HD gaming. Steam Machines are going to liven this market up but right now it's the best balance of power and form in PC land.	from £800 ★★★★★	
	4		Raspberry Pi Model B+ It's a fully functioning PC that's barely bigger than a credit card, and now it's a little more flexible than before thanks to two extra USB ports and better power management. Don't expect a 'proper' computer – this is for tinkerers after a fun new project.	from £25 ★★★★☆	
	5		Zotac ZBOX Sphere OI520 About the size and shape of a cannonball or cantaloupe, this striking sphere will certainly draw attention. For media playback it's perfect, but high-end gaming is a no-go due to low frame rates. However, even in full swing it barely raises a decibel.	£260 ★★★★☆	

GAMES CONSOLES






HOT BUY	1		Sony PlayStation 4 It may not quite be the finished article, but this is the best games machine on the planet. It has whisper-quiet operation, a sleek form and bags of power, with full 1080p on all titles and not a whiff of lag. When proper media streaming arrives, it'll be unstoppable.	from £330 ★★★★★	
	2		Microsoft Xbox One This is very different to the Xbox One of 2013. Most significantly, the unpopular Kinect feature is now out of the deal, allowing Microsoft to drop the price and releasing enough extra power for developers to make their games look and play better.	£330 ★★★★★	
NEW	3		Alienware Alpha It's not quite a PS4 or Xbox One-beater, but this is the most console-like PC there's ever been. Steam is the main interface, but it runs on top of Windows for maximum game compatibility, and performance is very impressive.	£450 ★★★★☆	
	4		Nintendo 3DS The 3D effect may be a gimmick that hasn't paid off, but put that to one side and the 3DS is still the king of the portable games machines. The XL is the biggest version yet, and there's now a massive catalogue of inventive dual-screen games to play.	£130 ★★★★☆	
	5		Nintendo Wii U While it hasn't had the same impact of the original Wii, don't underestimate the U's fun factor. Nintendo's bottomless bag of superb game franchises rolls on with the excitement of <i>Mario Kart 8</i> , with its anti-gravity karts and submarine racing.	£160 ★★★★☆	

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SLRs

HOT BUY	1		Olympus OM-D E-M1 The Olympus flagship is armed with the same excellent 16.3MP sensor as its predecessor the E-M5, but has an improved autofocus system, a startlingly good electronic viewfinder and masses of direct controls. Also look out for the E-M10.	£800 (body only) ★★★★★	
	2		Canon EOS 700D Look, it's a new Canon at No.2. No, wait, it's the old one. Actually, it's kind of both. The 700D is a minor upgrade over the 650D, keeping its 18MP sensor, flip-out touchscreen and autofocus during video and adding little beyond a new kit lens. Still great, though.	£330 (body only) ★★★★★	BEST FOR ALL-ROUND VALUE
	3		Sony A6000 Sony's new system camera may be tiny but it packs a big photographic punch. There may be no optical image stabilisation but the incredible speed and accuracy of the A6000's autofocus is a real highlight, as is its large, clear electronic viewfinder.	£400 (body only) ★★★★★	
NEW	4		Nikon D750 It's big and bulky, but otherwise this is one of the most comfortable and intuitive DSLRs money can buy. And with a handy tilt screen and some wireless connectivity features, there's none of the purist snootiness that we saw in the D810.	£1300 (body only) ★★★★★	
	5		Sony A7R We love this camera. It's light weight but tough and delivers results that outstrip pretty much any other compact system camera on the market. It has a huge full-frame 36.4MP sensor and noise-suppression. Your wallet might weep, but your photo album will sing.	£1300 (body only) ★★★★★	

COMPACT CAMERAS

HOT BUY	1		Sony DSC-HX60 2014's HX60 isn't a huge departure from its predecessor in terms of its build quality, ease of use, specifications and 30x zoom lens – all of which are excellent. What it does add is NFC and a newer Bionz X processor, making it a slightly nippier performer.	£260 ★★★★★	
	2		Sony DSC-RX100 III If you're looking for the best tiny snapper around, this is it. Excellent image quality, fast autofocus, a useful electronic viewfinder and professional video recording, all squeezed into a truly teeny package that'll fit into your jeans pocket. We're smitten.	£500 ★★★★★	
	3		Fujifilm FinePix X100S Fujifilm's souped up its fixed-lens retro shooter, with faster focusing and a big APS-C sensor. It's not all new, though, keeping the 35mm-equivalent f/2 lens and hybrid viewfinder from the X100. A less retro version with black finish is now available too.	£660 ★★★★★	
	4		Canon PowerShot G16 The G16 packs a lot into its sturdy body: optical viewfinder, loads of manual controls and an f1.8-2.8, 28-140mm (equivalent) zoom lens. Upgrades over the G15 include Wi-Fi and faster burst shooting of up to 12fps, while image quality is as good as ever.	£280 ★★★★★	
	5		Nikon Coolpix AW120 The ultimate rugged camera: almost indestructible, and fit for temperatures as low as -10°C, it will even survive a rinse cycle in your dishwasher. The AW120 also takes lovely pictures and impressive video in both good lighting and dimmer conditions.	£200 ★★★★★	BEST FOR EXTREME EXPLOITS

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IN CASE YOU MISSED... MULTIROOM AUDIO

**Bluesound**from £400 / bluesound.com

This is a system that's all about putting sound quality first, with support for hi-res files up to 24-bit/192kHz. It's not picky either: anything you play through it has the same full-bodied presentation that works with all genres. It's the best option for audio nerds.

★★★★★

**Pure Jongo X**from £50 / pure.com

The newly updated Pure Connect app makes a great first impression, with step-by-step instructions bringing Sonos levels of simplicity, although you can't access any other streaming services. If you're on a budget, this should definitely be on your list.

★★★★★

**Samsung M Series**from £160 / samsung.com

The three all-in-one speakers have the same triangular design that allows them to be used either laid flat or stood upright. It's not quite as seamless as the Sonos family yet, with local and online music sources not working together, but it's not far off.

★★★★★

**Sonos**from £170 / sonos.com

When it comes to multiroom audio systems, Sonos has pretty much single-handedly shaped the market. And its experience shows in both breadth of choice and simplicity of use. Although it doesn't support hi-res audio, this is still a stylish option.

★★★★★

HOT BUY 1		Pebble Steel Unveiled at CES 2014, the Steel keeps the straightforward looks, crisp display and five-day battery life that helped the standard Pebble win our hearts. But it holds more RAM, apps and customisable faces this time, and swaps the plastic for either a 'Steel' silver or matte black stylish suit, making it look and feel more like an actual watch. The Steel goes beyond the gimmicks and into the world of real-world wearable tech. Pop it on your wristwear wish-list.	STUFF SAYS The best smartwatch money can buy... and the original plastic Pebble is still available for £80 less from £180 ★★★★★
2		Fitbit Flex The Flex delivers all of Fitbit's activity-tracking smarts but in a form factor that's less fiddly than its belt-clip counterparts. It's packed with Bluetooth, NFC, vibratamotor and an LED display. See also the new Fitbit Charge, with numeric display, for £40 more.	from £70 ★★★★★
3		Jawbone UP24 Now with Bluetooth for hassle-free syncing, the stylish UP24 is worth the extra £30 over the Jawbone Up. The app introduces new challenges and tracks your sleep patterns. It will also gently nudge you, if you're lazing around, to get back on the move.	£100 ★★★★★
4		Motorola Moto 360 With its iconic, head-turning design, this could be the first wearable you will want to wear. The Moto 360's our favourite and most comfortable Android Wear watch so far, but its battery life might make you anxious and it's a few specs short of brilliance.	£190 ★★★★★
5		Philips Hue Pair these smart LED bulbs with 'recipes' on ifttt.com – set them to change colour with the weather or when it's time to run to the train. They also tie in with Philips' own Ambilight TVs, casting the colours from the screen across your entire room..	from £50 ★★★★☆
6		Roku Streaming Stick 'Streaming Stick' tells you all you need to know, really: this is a stick, and it streams. It streams plenty, too – Netflix, iPlayer, Spotify, Sky Now and Sky Go to name a few. And unlike Chromecast, it's also a dab hand with your own video and music files. Lovely stuff.	£40 ★★★★☆
7		LG G Watch R This circular smartwatch won't win any beauty contests, but that's about its only flaw. The G Watch R's plastic OLED screen has deep blacks, sharp text and good visibility. Its battery easily lasts a day and a half, and using it is a smooth experience.	£200 ★★★★☆
8		Google Chromecast This USB memory-stick-sized cord-cutter is compatible with Netflix, YouTube, Google Play movies and BBC iPlayer: a cheap, simple way of getting web-sourced movies and shows onto your living-room TV.	£30 ★★★★☆
9		Garmin Forerunner 920XT This fitness-tracking watch has so much included, it's bewildering. The star feature is the dedicated triathlon mode, which allows you to hit enter to move between sports, counting each bit (including transitions) separately.	£390 ★★★★☆
10		TomTom Multi-Sport Cardio The new version of the TomTom Multi-Sport adds an impressively accurate heart-rate sensor to an already strong formula, allowing for more focused and personal training. It'll track runs, cycles and swims, and the companion app is also much improved.	£240 ★★★★☆ BEST FOR TRIATHLETES IN TRAINING

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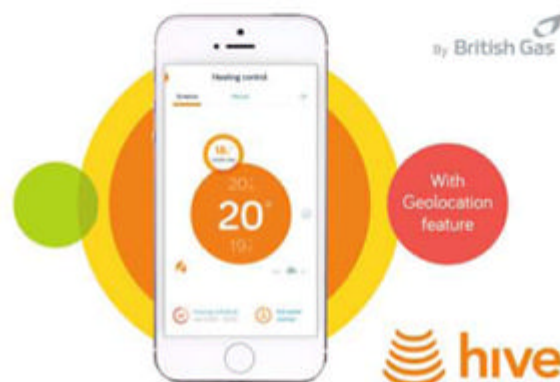
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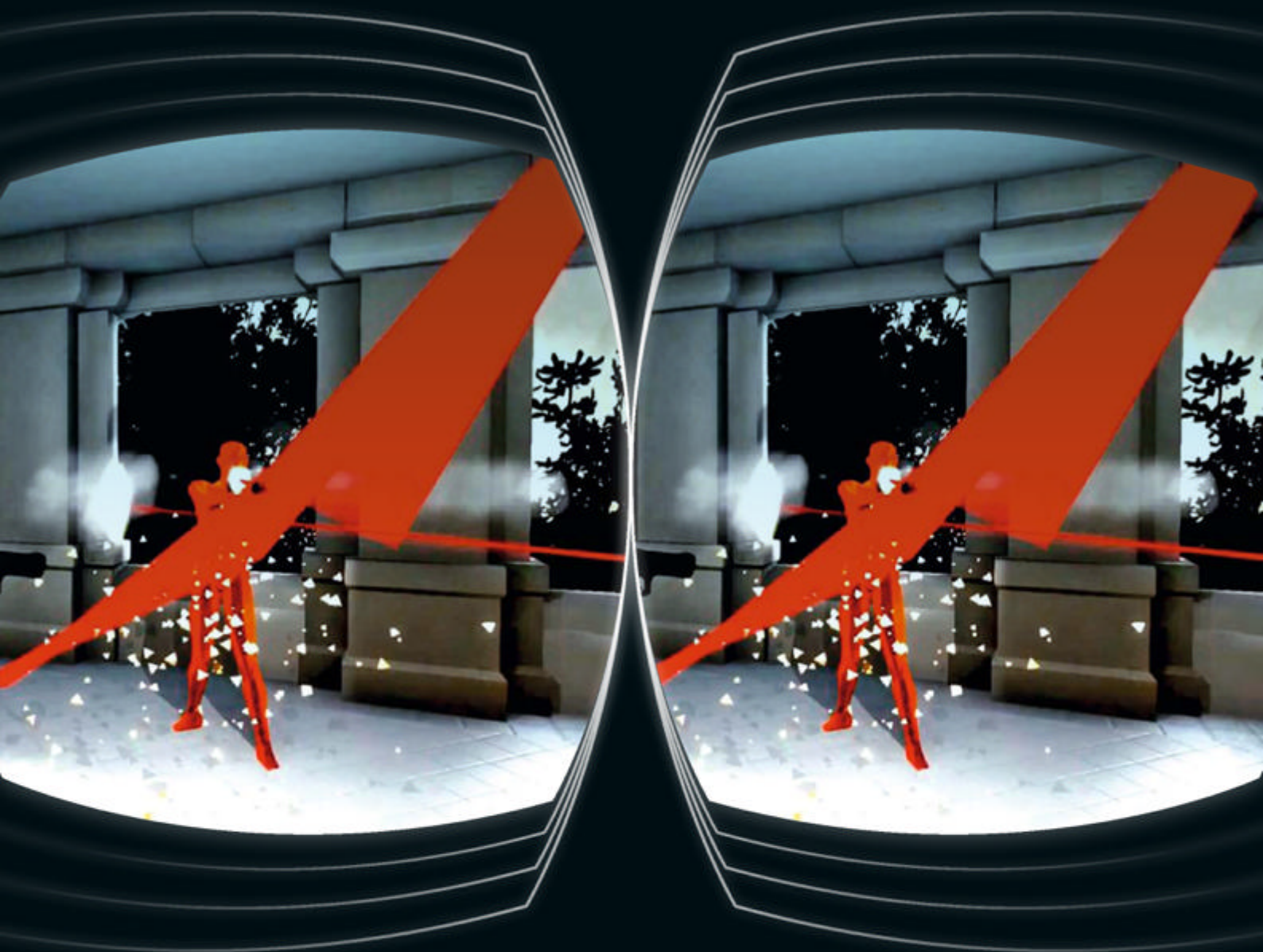


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NEXT BIG THING?



FORENSIC HOLODECKS

Someone's been watching *CSI* again. Nah, for hangover-friendly drama it's got to be *Cold Case*. Anyway, this isn't ludicrous *CSI* tech where detectives zoom into an image of the victim's cornea to find the murderer's reflection. This is based on real gadgets, namely the Oculus Rift. For years, police have been 3D-scanning crime scenes in meticulous detail using lasers. The trouble is, those details are usually then presented to juries on 2D paper. So the University of Zurich has made a prototype 'Forensic Holodeck' to plug the gap (and make courtrooms more fun).

That's not fair, I've already done jury service... Well, you'll have to buy an Oculus Rift with a copy of Old Bailey VR and its Magistrate Mayhem expansion pack. The tech isn't quite ready for 'crime-time' anyway. So far there's been one reconstruction of a shooting with this setup, which uses a Rift, an optical tracker, a laser scanner and Autodesk software. The tracker measures the wearer's position, letting them walk around the crime scene and experience another person's line of sight. Handy if there are doubts about whether the witness could see the suspect. Cue gasps and a fainting juror.

This isn't Judge Judy. Since when were games consoles admissible evidence?

Since they became accurate enough to help make super-informed decisions. Take bullet trajectories – not that easy to get your head around when they're a line on a bit of a paper, but see them in a virtual 3D environment and suddenly you're Columbo. The prototype was based on footage captured by CCTV at an internet cafe, where seven shots were fired. The accuracy needs to be fine-tuned, but it won't be long before you're cancelling your holiday to do jury service, rather than the other way round.

[Words Mark Wilson Image Superhot]

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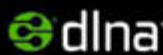
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